STRATEGIES OF READING AS COMMUNICATION

With Reference To

YEMENI TERTIARY LEARNERS

BY

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Dedicated to the loving memory of

My Parents

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Abstract

Reading is an important skill for all languages and all language learning. It is a skill complex to understand, complex to teach and complex to learn.

This thesis addresses the issue of reading from the reader's point of view. It provides a detailed analysis of the reading strategies used by the Yemeni learners of English at the tertiary level as they read textbooks. In doing so it draws from two domains of second/foreign language learning, viz reading and strategies. Within the framework of these two domains it focuses on reading strategies, depending on the first part (reading) on the reader-text interaction view of reading and for the second part (strategies) on the conscious effort involved in solving a reading problem. It investigates two related aspects of the reading process: reading problems arising in the creation of meaning as far as the systemic and schematic knowledge is concerned and reading solutions as given by the reader.

The concept of 'strategy' is first examined as it is found in learning and communication studies. It is then presented in reading and reading models. Studies that have addressed the issue are then reviewed.

Reading strategies are investigated through a five-stage design where a different instrument is used in each stage. Subjects in each of the five stages (questionnaires, interviews, classroom observations, cloze/recall tasks and verbal protocols in L1 and L2) range from 60 to 100 in number, coming from two different disciplines, viz Education and Engineering.

The data of the study are analysed using quantitative and qualitative techniques. The results present a picture of the strategies the readers used in reading texts in Arabic and in English in the form of some twenty-four different strategies, which are categorised as problem-

identifying and problem-solving ones. These strategies are then discussed with reference to the reading models presented earlier.

On the basis of this, implications for theory and pedagogy are made.

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CHAPTER TWO

The Concept of Strategy in Learning and Communication

CHAPTER THREE

Reading: Models and Strategies

LIST OF ABBREVIATIONS

BA	Group from the CASE
BS	Group from the CE
CASE	College of Arts, Science and Education
CE	College of Engineering
CR1	Comprehensible Rating 1
CR2	Comprehensible Rating 2
CS	Communication Strategies
CT	Cloze Test
ELT	English Language Teaching
ESL	English as a Second Language
FD	Field Dependence
FI	Field Independence
FL	Foreign Language
GSSC	General Secondary School Certificate
IL	Interlanguage
ISPS	Interactive Schema-theory based Problem Solving
L1	First Language
L2	Second Language
LEA	Language Experience Approach
LL	Language Learning
LS	Learning Strategies
MOE	Ministry of Education
NL	Native Language
NNS	Non-native Speaker
NS	Native Speaker
O	Observation
PA	Protocols in Arabic
PE	Protocols in English
PI	Problem Identifying
PS	Problem Solving
RC1	Recall Task 1
RC2	Recall Task 2
RS	Reading Strategies
RT	Recall Task
S	Subject
SD	Standard Deviation

SL	Second Language
SLL	Second Language Learning
SQR3	Survey, Question, Read, Recite, Review
ST	Student
T	Teacher
TA	Teacher Assessment
TL	Target Language

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CHAPTER ONE
Introduction

1.1 Introduction

This chapter sets the scene for this study on strategies of reading. It states the purpose of the study, surveys the background to the educational system in the Yemen in general and the teaching of English in particular, gives the assumptions and describes the organisation of the thesis.

1.2 The purpose of the study

This thesis aims at providing a detailed analysis of the strategies of reading or reading strategies (RS, as I will be referring to it, henceforth) used by the Yemeni learners at the tertiary level to tackle textbook reading problems.

There are two purposes from this analysis, viz a principal one and a secondary one. The principal purpose is to throw light on second language learning (SLL) theory as far as RS are concerned and the secondary purpose is to provide pedagogical recommendations for reading instruction for the tertiary levels. I, therefore, place this thesis within SL reading and strategy research and within the context of the English language needs of the Yemeni situation . The former justifies my focus on RS in SLL and the later justifies my focus on the reading problems faced by students at the tertiary level classrooms and my choice of the Yemeni students as my intended audience. To further explain these two points, it is necessary, first, to survey the English Language Teaching (ELT) situation in the Yemen, and then to move on to theoretical issues. The ELT situation can be only understood by looking at the history of its educational system.

1.3 The geographical and historical background to education in the Republic of Yemen.

In May 1990 the independent states of the Yemen Arab Republic and the People's Democratic Republic of Yemen were unified to give birth to the present Republic of Yemen.

The Republic of Yemen today comprises an area of 536,879 sq. km. including the islands of Socotra and Perim with a population of around fourteen million (the 1988 census for Democratic Yemen was 2.345 million and the 1986 census for North Yemen was 8.6 million).

The country is situated in the south-western corner of the Arabian Peninsula. It is bordered in the north by Saudi Arabia, in the south by the Indian ocean and the Arabian sea, in the west by the Red Sea and the strait of Bab-al-Mandab and in the east by the Sultanate of Oman. Inland, Yemen is a mountainous region with four distinct geographical divisions splitting the country into four parallel strips: the mountains running from the extreme south right into Hijaz in the north, the mountainous midland region, the western and southern coastal plains and the eastern area which is mainly desert. The northern parts of the country receive a reasonable amount of rainfall and have the best climate to be found in Arabia. The climate in the southern parts is tropical with scanty rainfall ranging between 50mm to 400mm. The coastal area in the extreme south is hot and humid in summer and mild in winter.

The location of the country has given it an important strategic position. In the past Yemen (both parts) dominated the trade routes between the East and the West, and today its importance is even greater as it is a country of formidable potential, possessing the biggest population in the Arabian Peninsula, the only fertile land in the

region, and still controlling the strait of Bab-al-Mandab, with Aden as one of the most strategically important harbours in the world with huge potentials as a reborn free port.

As a result of unification the country is going through a number of changes in all its spheres. The educational system like all other systems in the country is also in a process of changes and modifications that aim at providing a unified, democratized modern system.

In order to understand the nature and structure of the existing educational system and its content as far as the teaching of English is concerned, and in order to get a vivid picture of the changes that have taken place so far, and to follow the major trends and the directions of change, and to determine the possible future developments, a brief historical survey of the educational situation before the 1962-1963 revolutions is essential.

1.4 Education in the pre-revolutionary Yemen

Yemen's strategic position at the crossroads of trade routes between the East and the West led to its becoming the target of several foreign powers. It, therefore, went through a series of conquests, some successful some not, since A.D. 500 (the Romans, the Abyssinians, the Persians, the Portuguese, the Turks and the British). Although Yemen has been a major learning centre of Islamic, Arabic and scientific studies since the early days of Islam, there is a tendency in Yemeni educational literature to deny the existence of any kind of education before the revolution. In the middle ages, for example, learning flourished in Yemen as it did in Baghdad, Egypt or Muslim Spain. Zabid, in the Hodeidah province, is famous for such studies until today (Al-Mekhlafi 1986). As it is, information about education during the series of conquest periods is very meagre. The first signs of any provision of education and educational

development appear during the Turkish occupation (north Yemen) and the British occupation (south Yemen).

1.4.1 Education in the pre-revolutionary North

Al-Mekhlafi (1986) traces the pattern of educational development in the north in three distinguishable periods.

a. Education during the Turkish occupation (1872-1918)

The Turks started the provision of some kind of state schooling at the turn of the century. During the period of Hussein Basha, the Turkish governor of Yemen, the Directorate of Knowledge was established in 1895, together with a number of primary schools (Makatib) as well as a teacher training school, an industrial school and a preparatory school. It may be accepted that

> some kind of formal schooling was introduced by the Turks but that the provision was limited exclusively to a small privileged group who were to man administrative system, as these schools were situated in the main towns only.
>
> (Al-Mekhlafi 1986:235)

b. Education during the Imamate reign (1918-1948)

The general picture of education during the rule of Imam Yahya is a bleak one. It appears that very little provision was made for education. Formal education, when provided, was for a few upper-class families who administered the Imam's offices or for a small number of those needed in the army and lower status roles. For the masses, education remained the responsibility of the mosques and religious institutions and the local 'Kuttab'. Some attention from the Imam, in 1925, led to the establishment of a religious school in Sana'a whose curriculum involved the teaching of the Koran, Islamic and Arabic studies, arithmetic, geography and other sciences and arts, and an Orphan's School where the Koran, reading writing and grammar were taught.

c. Education in the last decade of the Imamate Rule (1948-1962)

After World War 2, in view of looming social change, Imam Ahmed appeared to have made some cautious overtures to the outer world, which encouraged the provision of education. The available figures indicate that the number of schools increased but the quality and structure remained untouched. In 1956, as a result of a pact signed between Yemen and Egypt and later Saudi Arabia resulted in the re-establishing of the police and military colleges and the establishment of three other schools related to military service. Although the opportunities were limited, some Yemenis did receive education in foreign countries as well to acquire skills and knowledge necessary for government administration and the military services.

The Imamate era in general is characterised by its complete isolation from the outside world. Yet the situation does not seem to be unique of Yemen at that time (Al-Ghashmi 1986, Al-Mekhlafi 1986), when education, almost everywhere, was provided by religious and charitable organisations. State education catered only for the previliged few. It was intended to prepare a small number of the elite for high administrative roles which was determined by the ruling group.

The quality of education in the pre-revolutionary north thus has been generally very poor, especially in the rural areas, where the learning of the Koran and simple counting skills were considered education. In the words of Al-Mekhlafi (1986:241)

> Almost all schools in the rural areas were one teacher schools, many of them without classrooms. Memorization appears to have been the paramount learning/teaching strategy: the Koran was to be learnt by heart, and due to lack of facilities and teachers, new ideas and other areas of study, if they existed at all, were also learnt by heart.

In the urban areas the quality and content were equally poor. The following table summarises the situation then regarding schools, students and teachers.

Table 1.4.1.1
Number of schools, students and teachers in 1958.
(Based on the information provided in Al-Mekhlafi 1986:238)

Type and level	No of schools	No of students	Length of course	No of teachers
primary	50	13301	6 years	301
elementary	663	36350	4 years	663
local (kuttab)	1438	53117	—	1436
intermediate	4	321	4 years	43
preparatory	1	75	4 years	16
secondary	3	221	3 years	43
teacher training	1	50	2 years (after intermediate)	16
Ilmiyah	15	814	6-13 years	108
agriculture	1	38	—	108
technical	1	200	-	20
health school	1	100	—	—

1.4.2 Education in the pre-independence South (1839-1967)

The educational history of the pre-independence south, like its political fate, runs on somewhat different lines. Leaving behind, as in the case of the northern history the former conquests, I will briefly survey the educational system during the British occupation, since the period of occupation of the south by the British is equal to more than the Turkish and the Imamate periods of the north.

Although the British interests in the area dates back to 1609, the occupation of Aden actually starts in 1839. Bahumaid (1990) gives a detailed account of the events of the period. According to his survey, during the first few decades of the occupation two separate administrative zones were created: the Western protectorate and the Eastern protectorate. The British controlled these protectorates through political agents: the hinterland thus acted as a buffer zone to protect the port of Aden. Another important development took place in 1937 when Aden (which was until then administered through British India) became a Crown Colony and thus came under the direct control

of the Colonial Office in London and was ruled by a Governor. Gradually the hinterland protectorate treaties too changed, bringing the rulers of these parts under a controlled rule of the Governor as well.

Glimpses of the first attempt at general education in the Colony are found in the Annual Reports (1954, 1960). According to these sources, general education in the Colony started in 1856, seventeen years after the occupation. By 1937 a regular system of Government-aided, recognised and unrecognised schools, had been established, alongside the traditional 'kuttab' schools. At that time the highest level reached was a Junior Cambridge School Certificate which was, however, occasionally taken by a few pupils. In 1937 the first British Director of education was appointed and during 1954 a new Five-year Plan was prepared for 1955-60 providing for

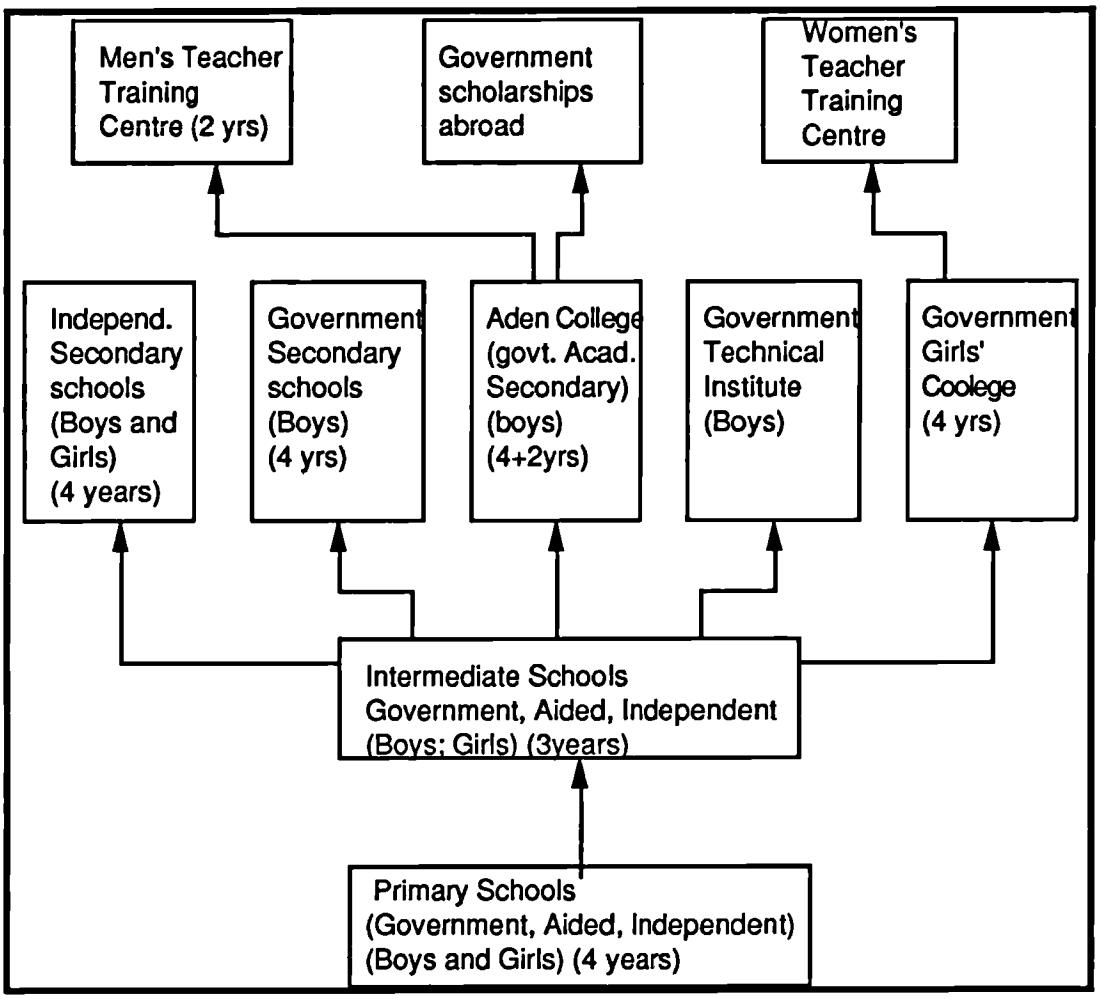
> three new boys intermediate schools, one new girls intermediate school, five new boys primary schools and five new girls primary schools. Provision is also being made for a men's' Teacher Training Centre.
>
> (Education Dept. 1953-54)

Secondary education began in 1950 with the establishment of the Aden College. The demand for technical education led to the opening of the Technical Institute in 1952. The Institute offered four-year technical and commercial courses. Provision was also made for vocational training which included teacher training institutes for girls and boys and a health institute. No university education was introduced and scholarships abroad were very few. Besides there were a few private institutions, eg the Islamic Institute, founded in 1955. Despite the expansion of the educational system, there was very limited progress which

> was further impeded by the widespread illiteracy in the society at large.
>
> (Bahumaid 1990:92)

The structure of the educational system in 1960 was as shown in Figure 1.A.

Figure 1.A
Aden Colony - Structure of the educational system
(Source: Education Dept. 1960)

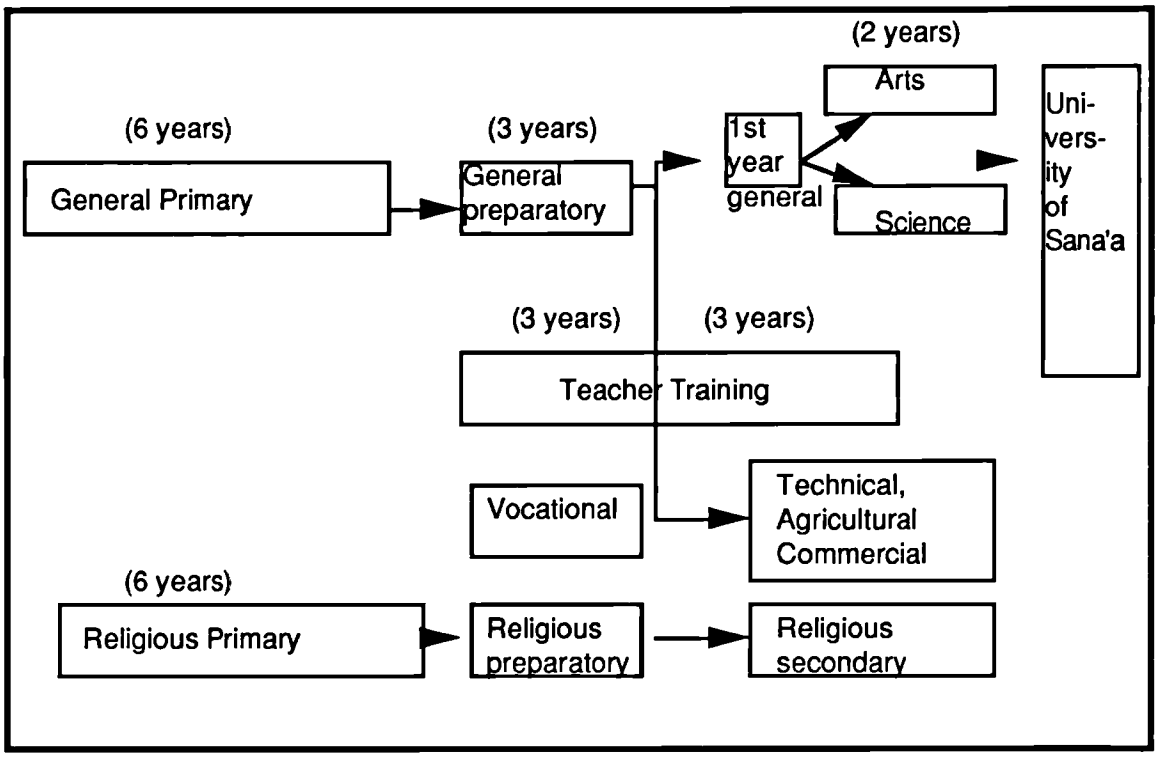


1.5 Primary and secondary education in the revolutionary North

The development of a modern education system in the North gained impetus after the revolution of September 1962. One of the actions taken by the Revolutionary Republican Council in 1962 was to establish a formal educational system of public schools. However, it was the constitution adopted in December 1970 that laid the framework for a an effective educational development. The system in 1970 comprised a 6-year primary cycle, a 3-year preparatory cycle and a 3-year secondary cycle and up to four years of university education. During the years 1970 and 1982 the system underwent some changes. The preparatory cycle was divided between general preparatory and vocational schooling, including primary-teacher training. The general

preparatory prepared pupils for different options at the secondary level, viz general (arts and science), vocational (technical, commercial, agricultural) and teacher training. The present structure of the educational system as it stands today at the crossroad of change is as follows:

Figure1.B
The present structure of the educational system (northern governorates).
(Source: Al-Mekhlafi 1986 and Desa 1985)



a. Primary Education: This level seems to be an extension of the pre-revolutionary period. The general commitment is to make this level compulsory and provide it as a universal right. There has been a rapid growth in the number of pupils, teachers and schools since 1970 and the figures for 1986-87 (Ahmed 1988) are as follows:

Teachers	Pupils	Schools
18,193	985,721	5,942

b. Preparatory Education: This started in 1962-63, and has expanded rapidly since then. Its main purpose is to prepare children for the next level, both general and

vocational, yet it is a self-contained stage as it ends with a general public examination. When technical education was introduced in 1971 it began at the preparatory level. Teacher education also starts at this level and most significant for the present study, the teaching of English also starts at this level. The figures for the number of teachers, pupils and schools for the year 1986-87 (ibid) are

Teachers	Pupils	Schools
4,814	123,475	965

c. General Secondary Education: This level started in 1963-64, in which a 3-year course is provided and has grown since, reaching an enrolment of 37,335 pupils in 1986-87. In the first year all students follow the same general course; in the second year they are streamed into Scientific and Art courses, both leading to the General Secondary School Certificate (GSSC), the highest level of education before the university. Vocational Education and Teacher Training are also provided at the secondary level.

A uniform nationwide curriculum for all levels of education was developed in the late 1970s with technical assistance provided to the Ministry of Education (MOE) by multilateral and bilateral agencies, which also assisted in the preparation of textbooks.

Since 1970 a major campaign against illiteracy has been carried out by the chief literacy organisation, attached to the MOE. The adult literacy programme comprised an attenuated primary-school curriculum of grade 4-level literacy and numeracy skills. In 1979 some 12,600 adults were enroled in 97 literacy centres operating in public schools. Besides in 1974-75, district training centres were created by the MOE and combined the literacy program with the provision of basic training in trade skills. The number of adults receiving such training in 1980-81 was 742 (Desa 1985).

1.6 Primary and secondary education in the post- independence South

The South emerged as an independent nation on 30 November 1967, after 129 years of British colonial rule. The pattern of education as described at independence by Coleman (1968:35)

> [..] was that prevalent in other British colonies, characterized by low rates of enrolment, irrelevance of curriculum to local conditions and the absence of technical, agricultural, and higher education.

Since independence one of the goals of education has been to develop and root deeply the concept of nation-building in new generations. The general structure of the system has been modified twice. The first time was immediately after independence when the different structures in practice during the colonial period had to be abolished due to the urgent necessity to create a unified system of education throughout the Republic. The MOE thus adopted a structure similar to the one in the north (6+3+3) which in turn is a model of some Arab countries such as Egypt and Iraq.

The second modification occurred in 1975, when in accordance with the resolutions of the first Educational Congress, the structure was changed into an integrated one from kindergarten to university (2+8+4+university). The merits of this new structure are various

> Apart from guaranteeing a structural coordinating of the teaching experiences throughout the different levels, and providing eight years of universal schooling for children, it is envisaged that all education beyond the first level should be linked to social and economic needs.
>
> (Al-Noban 1985:5619)

a. The Unity Level: This level consists of eight classes. The teaching of English starts at the Fifth level.

b. The Secondary Level: This comprises extended-secondary academic education of four years' duration, which is mainly a preparation for university, or specialised

secondary education of five years' duration or vocational education of two years duration.

Education is free at all levels and is open to both sexes, and equal opportunities are maintained for males and females. The enrolment for both sexes in the Aden governorate is near to the total number in the age group, but gaps are observable in sex-enrolment ratios in some other governorates. The following tables show the increase in educational provision between 1966-67 and 1980-81 (Al-Noban 1985) and the figures as they stand in 1987 (Bahumaid 1990)

Table 1.6.1
Increase in educational provision between 1967 and 1981

Academic year	Schools	Pupils	Teachers
1966-67	256	52820	1910
1980-81	936	252137	11271

Table 1.6.2
Pupil enrolment at the different levels in 1987

Level	Kindergarten	Unity	Secondary
Pupils	8,806	310,839	31,530

The south had its own massive campaign for the eradication of illiteracy launched throughout the country in 1973. As a result

> [...] a considerable drop in the number of illiterates occurred and by 1977 the PDRY ranked eleventh in terms of literacy rate (27%) among Arab states ahead of countries like Iraq (26%), the UAR (18%) and Saudi Arabia (18%).
>
> (Bahumaid 1990:99)

1.7 The educational system in the present Republic of Yemen

Having surveyed the educational system, basically the primary and secondary levels of schooling before the unification, I now present a picture of the system as it stands today before moving on to the tertiary level which is the main focus of this study.

The present educational system is naturally a combination of the levels existing so far. The 12-year system of the north (6+3+3) and the south (8+4) is to be modified into a 9+3 year system, where the first nine years will provide elementary education in Arabic, English as first and S/FL languages, Arabic and Islamic History, vocational and technical training, among other requirements.

The tables on the following pages give a statistical overview of the number of pupil enrolment in the various provinces of the Republic at the primary and secondary levels as listed by the MOE on the first Anniversary of the unification (May 1991).

1.8 Education at the tertiary level in the Yemen

Tertiary Education in the Yemen is provided by the Universities of Sana'a and Aden.

a. The University of Sana'a

The University of Sana'a was established in 1970 with faculties of Arts, Science, and Modern and Islamic Law. Later in 1973, faculties of Education and of Commerce and Economics were added. This was followed in the second Five-Year Plan (1982-87) by three other faculties, viz Medicine, Engineering and Agriculture. Student enrolment in the university over a 15-year period ranged between 433 (1973) to 23457 (1988). During this period the university has expanded. Its stated role is to provide needed manpower for industrial development, to train teachers and instructors for the country's schools, to prepare administrators and technical specialists for planning and executive agencies and mining establishments, to conduct scientific research and applied studies,

Primary Education in the present Yemen (1990-91):
Number of schools and pupils in the different provinces.
Source MOE

		NUMBER OF PUPILS									
	No. of Schools	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Total
Province											
Alamana	120	22196	20553	20866	21151	18353	16386	13203	10502	8919	152129
Sana'a	2089	41131	37133	2264	29061	23780	24983	13062	10781	8612	223183
Aden	70	9378	9899	9561	8446	8257	6998	6294	5366		223183
Taiz	2363	67121	45654	50628	45439	37937	34664	33555	24915	19923	64208
Al-Hodeida	659	24196	22293	21711	20258	17357	20203	1075	8362	7466	163696
Lahej	341	18751	15150	13015	10637	9733	7564	6236	4402		85488
Ebb	1252	40238	40235	37890	36509	21180	24696	16442	12373	10852	260516
Damar	1005	15741	19000	17352	16347	14192	15586	7319	4498	3430	113465
Abyan	185	12827	10719	9358	7290	6603	4826	3831	3269		58723
Hajja	1237	19299	17250	17387	13448	12523	12113	4874	3773	3693	105360
Albeida	436	10102	2935	8782	7698	6416	6774	3493	2450	2467	58037
Shabwa	135	6745	5548	5373	3983	3624	3050	2176	1909		32458
Saada	262	7512	6855	6462	5110	4535	4378	2477	1702	1402	40433
Almahweet	291	6900	6743	6212	5645	4604	5434	2591	1574	2011	41715
Hadramaut	294	16840	18285	15683	14951	14502	12273	9421	7231		109186
Mareb	274	2269	3324	2983	2216	1838	2204	1086	999	1018	17973
Algouf	130	1831	1680	1479	1090	789	907	276	278	314	8843
Almahra	38	1560	1391	1111	916	674	514	452	328		6946
Total	12421	324646	292678	279493	250195	217906	223679	138637	104852	70108	1902195

Secondary Education in the present Yemen (1990-91) :
Number of schools and pupils in the different provinces.
Source MOE

Province	Number of schools	Year one	Year two		Year three		Year four	Total
		General	Science	Arts	Science	Arts		
Alamana	24	7149	3857	1112	3216	1307		16641
Sana'a	122	4540	2302	1089	1240	941		10112
Aden	16	3297	2520		2555		2171	10543
Taiz	451	18196	9681	2463	6328	1918		38586
Al-Hodeida	40	4428	1974	1099	1380	992		9873
Lahej	18	2657	2243		1641		1239	7780
Ebb	84	6571	2639	1404	1755	1690		14059
Damar	41	1835	867	366	429	431		3928
Abyan	8	1967	1145		749		582	4443
Hajja	85	1748	625	601	395	655		4023
Albeida	29	8850	672	265	437	398		2663
Shabwa	8	1317	732		559		417	3025
Saada	32	791	352	291	267	260		1961
Alhuweet	24	495	208	174	176	265		1450
Hadramaut	12	3184	1905		1310		1062	7461
Mareb	22	439	290	114	232	164		1239
Algouf	17	255	66	154	50	203		728
Mahra	2	137	97		57		72	363
Total	1008	59891	32181	9246	22776	9224	5543	128879

and to train Yemenis so that foreign personnel can be replaced. The university thus offers a full range of studies in its faculties, the programme extending for most disciplines to four years beyond secondary education leading to the bachelor's degree. The teaching of English which starts at the preparatory level and continues at the secondary level (English features as a key subject in both the Arts and Science sections), has a dominant place in the syllabuses of the university. Admission to the university is based on successful completion of the general system of education and the percentage obtained by a student is significant in his/her getting a place in any of the various faculties.

b. The University of Aden

Tertiary education in Aden started almost at the same time as in Sana'a, with the opening of the College of Education. However, the University of Aden was established in 1975. Today the university comprises six different faculties with a number of branches affiliated to its oldest institution, College of Education. The following table shows the growth of the university over the last two decades and the present intake by each of its faculty. As in the case of the University of Sana'a, the percentage acquired by the students, in theory, guides their getting a seat in one of the various faculties. For instance, a student with an average of 80% at the GSSC will be allocated to the Faculty of Medicine, (unless s/he chooses otherwise) whereas, a student with say a 60% will find a place only in the College of Education.

Table 1.8.1
University of Aden - Establishment of the various faculties and the present intake.

Faculty	Year of Establishment	Intake (1990 - 1991)
1. Education (now known as College of Arts, Science & Education)	1970	413
2. Agriculture	1973	69
3. Economics	1974	193
4. Medicine	1974	134

5. Technology (now known as Engineering).	1978	133
6. Law	1978	108

Table 1.8.2
Admission conditions for the various colleges of the University of Aden.

Faculties	GSSC %	Specialisation
Medicine	80%	Science
Law	65%	Arts
Engineering	65%	Science
Economics	60%	Both
Agriculture	60%	Science
Education (Aden, Zingibar, Saber)	60%	Both
Education (Mukalla)	55%	Both

So far I have been providing a brief picture of the educational system in the present Yemen. I now move on to the place and the teaching of English in the Republic.

1.9 The place of English in the Yemen

There has been a distinct linguistic trend in the north and south of the country in the past, as is by now evident, due to the historical background of each part.

The north has had a homogeneous Arabic-based linguistic set up throughout its history and English has become the S/FL because of it being an international language, considered necessary for a modern developed educational system. However, its history in the south is obviously different.

Although the Arabs constituted the largest group in the Aden colony, a number of different languages were spoken during the British occupation. Some fifteen different languages are reported to have been used at one time by the multitude of ethnic groups, then residing in the colony. However the most prominent was English. Bahumaid (1990:93) describes the role of English during the British regime as follows:

> The linguistic scene was characterised by the ascendancy of English, the language of the dominant culture, and the enhancement of its status and role in the society. It was the official language in the Colony. It was also the medium for legal proceedings in the courts, commercial and banking transactions and all other types of business dealings. In addition, English was the medium of instruction in government secondary schools and most private schools and institutes and a compulsory subject from the final year of the primary cycle through to the third year of the intermediate cycle

The occupation period was not so good for Arabic. In fact, it saw a substantial decline in its status and importance.

Today, throughout the Republic of Yemen the role of English is reduced and Arabic is the national, official language, the language of all instruction at schools, the language of the media and the language of the mass and the class. It is a symbol of cultural identification. It is the mother-tongue of almost all citizens, barring the ethnic minorities (eg Urdu/Hindi speakers and Somalis).

The importance of English, however, is recognised throughout the Republic as a F/S language. I do not intend to defend its status as a second/foreign language; I would rather place it somewhere in the middle of a S/FL continuum and refer to it as a second rather than as a foreign language. There are a number of reasons for this. For example, it is considered, by many, as essential for a multisided development of the modern Yemeni citizen. Its role in certain sectors of the civil services such as airlines, navigation, banking, insurance, international telecommunications, customs, immigration, foreign trade, (Bahumaid 1990) as well as tourism, health services and medical prescriptions is an indication of its overall importance.

English also has a place in the mass media. There are no local newspapers in English; however, an English version of the daily bulletin of the Saba and Aden News Agencies is provided by the media. There is a nightly news telecast in English on Yemen television, newsreel programmes as well as weekly showing of British/American films

and serials, Children's films and ELT programmes. English films are not only shown in most cinemas but are also available in the video centres in the Republic on regular basis. The other non-Arabic films (eg Indian, European) are usually subtitled in Arabic and English.

English has also a place in the streets. Most banks, companies, hotels, restaurants, and shops with Arabic names display their names in English as well. In addition, the Yemeni confectionery and other products are also modelled on their English counterparts. Hoardings displaying these products in Arabic and English are a common sight in the Republic today.

But above all English plays a prominent role in education.

1.10 The teaching of English in the Yemen.

In Yemen, today, the languages taught in schools are Arabic (starting in the I year of a 12-year system) and English (starting in the V year in the southern governorates, and in the VII year in the northern governorates). In other words, a pupil (starting school at six or seven) starts learning English at the age of 12 onwards, through to the final year of the secondary school. It is compulsory to pass in English in order to qualify for the GSSC.

The English syllabuses are unified for each group of governorates and aim at teaching the basic skills. They have been highly structural in the past. However, efforts are now being made to make them more functional/notional. The primary/ unity schools have an average of 6-8 periods a week while the secondary schools allow 5-7 periods (each period of a 35-45 minutes approximately).

In higher Education English has a dominant place in the syllabuses of both the universities.

In the University of Sana'a, the Language Centre at the Faculty of Education plays a major role in the implementation of the various ELT programmes. Besides, at the Faculty of Arts, English literature is offered as a specialisation.

In the University of Aden the medium of instruction is English in disciplines such as Medicine, Engineering, the Departments of English, Maths/Physics and Chemistry/Biology of the College of Arts, Science and Education. In the other disciplines of University, Arabic is the medium of instruction but English, as a college/university requirement for all specialisations, is taught for a year or two, depending on the needs of the various disciplines. For example, students doing a degree in Geography will be taught English for one year whereas those studying Agriculture will learn English for two years.

1.11 English at the College of Arts, Science & Education (CASE) and the College of Engineering (CE)

This study, as stated earlier, is set to examine the reading strategies of the tertiary learners. These learners will be represented by the students of Arts and Science (cutting across the basic two specialisations at the secondary level). For the Arts subjects I have selected my sample from the CASE (Department of English) and for the Science subjects my sample is drawn from the CE. The common ground between the two specialisations is that the medium of instruction for both is English.

The present student enrolment in the English departments of the various CASE faculties and in the CE (1990-91) is shown in the Tables below.

Table 1.11.1
Student enrolment in the different colleges of Education (English) in the University of Aden (1990-91).

College	Education Aden (B.Ed)	Education Mukalla (B.Ed.)	Education Zingibar (Dip)	Education Saber (Dip)	Total
Males	57	72	41	28	198
Females	120	53	12	17	202
Total	177	125	53	45	400

Table 1.11.2
Student enrolment at the College of Engineering (1990-91)

Year	First	Second	Third	Fourth	Fifth	Total
Males	102	60	40	38	53	293
Females	24	27	24	13	14	102
Total	126	87	64	51	67	395

The CASE prepares teachers for grades 5-8 and 9-12 in two separate courses of two years (Diploma) and four years' (B.Ed) duration respectively. Subject specialisation for each is almost identical: Arabic, English, History, Geography, Physics/Maths, Chemistry/Biology, Philosophy and Polytechnic. Professional educational subjects, such as Psychology/Education and Teaching Methods take up 12-15 per cent of the time.

The English Department trains teachers for ELT for the Unity and Secondary schools, although not all graduates from the Department join the teaching profession. The Department also provides teaching staff and syllabuses for all the teaching of English in the other colleges of the University of Aden (except remote ones like Mukalla). It also co-ordinates with Foreign Language Institute in organising evening classes for in-service government employees.

The English syllabuses, designed by the department, cater to the needs of the teaching of the four skills (reading, writing, listening and speaking) besides Literary Readings

and Grammar in the first two years of the B.Ed. programmes, and additional subjects such as Linguistics and ELT Methods in the third and fourth years.

Table 1.11.3
First and Second year courses for the CASE (English)

First Year Semester 1 & 11	Hours per week		Second year Semester 1 &11	Hours per week
Listening comprehension	2		Survey of literature	2
Spoken English	2		Spoken English	2
Reading	**2**		**Reading**	**2**
Writing	2		Writing	2
Grammar	2		Modern English grammar	2
Selected literary readings	2		Genre (Fiction)	2

Reading features as a dependent subject in the first and second year of the programme. The objectives as set in the syllabuses for the First year reading are rather vague and aim at

> improving the reading skills of the undergraduate students both in speed and in comprehension with the help of suitably graded materials
>
> (1980-81 p. 11)

The objectives for the Second year are similar

> The students' skill in reading will be developed both in speed and in comprehension.
>
> (1980-81 p. 33)

The CE, on the other hand, has courses in three different disciplines, viz, Electrical Engineering, Civil Engineering and Mechanical Engineering. The medium of instruction is English except for the general subjects. All the three disciplines are taught the following subjects in the first year, in order to provide a general base for the specialisations:

Table 1.11.4
First year courses for the CE

Semester 1	Hours per semester		Semester 11	Hours per semester
Arabic	32		Arabic	32
English	32		English	32
History	32		History	32
Mathematics	96		Mathematics	96
Physics	80		Physics	80
Chemistry	80		Chemistry	80
Workshop technology	80		Workshop technology	80
Geometry and technical drawing	80		Geometry and technical drawing	80
Sports	16		Sports	16

In the second years English and Sports continue as common subjects, but there is a development towards the specialisations, in that the Electrical students receive education in electrical matters, the Civil students in civil matters and so on. There is no teaching of English as a language from the third year onwards, except that the students learn all their specialisation subjects in English.

Reading features as an integrated skill in the language courses and is individual-based from the third year onwards.

The courses of English at the tertiary level, thus, cater to the different needs and requirements of the various disciplines. They range from general English courses to highly specialised ones, again depending on the needs of the students. These needs may relate to the oral or written medium and to productive or receptive communication. If one comes to analyze the needs of the tertiary learners as regards the four basic skills, viz listening, speaking, reading and writing, one will have to choose the most essential of these. Tertiary learners rarely listen to or speak in English outside their language classrooms; writing comes only after reading in most academic activities. Besides, an

extensive amount of work already exists in the area of speech production (eg Faerch & Kasper 1983b, Tarone 1983, Bialystok 1983, among others). In view of the overall importance of the receptive skills for the learner's general communicative competence (Canale & Swain 1980), this is clearly an area in need of close investigation. And within the area of speech reception from the particular angle of how learners cope with their problems, reading seems to be the obvious choice.

1.12 Choice of topic and angle of research

As a teacher of English at the tertiary level and as a teacher of reading I consider it vital that we should be exploring ways of best helping students negotiate a text, since time is limited and the need for reading is great. And one way of doing so is to look at reading from the learners' point of view. For example, it will certainly be fruitful to know if effective reading results from selecting certain clues necessary, which clues Yemeni readers choose when confronted with an unfamiliar type of text. How do they read? Do they depend on words, phrases or sentences? Do they rely on their general knowledge? What are their reading problems, and above all how do they go about solving their problems? In other words, what techniques or strategies they resort to? This then becomes the central point of this study: the identification and analysis of the reading procedures of the tertiary readers. In doing so, this thesis draws from two main domains of the SLL theory, viz strategies and reading.

Research on both is rather scanty, though developing. In the emerging literature on strategy prominence is given to the hypothesis underlying the view of the approaches adopted in the language classroom. With the advent of the communicative approach to language teaching the traditional roles of students and teachers have altered. This approach has transformed

> the traditional non-communicative, teacher-centred classroom into innovative, communicative, student-centred classroom
>
> (Oxford et al 1989:35)

Such changes in classroom roles and structure has forced learners to take a greater degree of responsibility for their learning. Instead of initially focusing upon the teaching act and viewing learning as adapting to teaching, in this reconceptualisation of the instructional process, which is labelled 'the learning-teaching process' (Hosenfeld 1977:52)

> students provide the first input into instruction in the form of learner strategies and teaching consists of adapting to this input
>
> (Hosenfeld 1977:52)

As such there is a focus on the learner and the identification of learner strategies, especially of communication strategies (CS). This is reflected in studies by Rubin (1975) Naiman et al (1976), Faerch & Kasper (1983a) and Bialystok (1984) among others, aiming at developing students' metacognitive, cognitive and social awareness.

In the reading research, similarly, the focus has shifted from the text to the reader or reader-text interaction. This has resulted in studies focusing on the strategies readers use in dealing with comprehension problems.

Within the framework of these two domains, the thesis focuses on *reading strategies*, depending for its first part *reading* on the reader-text interaction view of reading (which is a less explored field of investigation), and for the second part *strategies* on the conscious effort involved in solving a reading problem. It investigates two related aspects of the reading process, viz **reader-problem** arising in the creation of meaning as far as the systemic and schematic knowledge is concerned and **reader-solution** as provided by the learner.

1.13 Value of the study

Reading has been chosen for this study for a number of reasons. The tertiary learners in this study (like all SL learners) in the selected disciplines for the study, as well as their counterparts in Medicine and similar specialisations throughout the country, need

reading for all their learning tasks in the target language (TL). Their reading range extends from reading their own scribbled notes on scraps of papers to great works like Shakespeare's "Macbeth".

Reading forms the core of any ESL programme. There are two ways in which learning to read in a SL differs from learning to read a first language. First there is the obvious need to learn the TL and second there is the fact that a great deal of the ability to read transfers automatically. That very automaticity has left the ESL instruction of reading with the impression that there is very little or no need to teach the process of reading. It has been realised (Mackey et al 1979) that many students have very poor reading habits to transfer from their L1 and thus in many cases reading strategies that should have been learned in L1 instruction must be re-taught.

As in so many other kinds of teaching and learning the contribution of the learner to learning to read has almost certainly been underestimated. It seems clear that for reading as for all of the higher level language functions, the human mind must be innately programmed, and that the job of the teacher is to activate and not just to create the programme. Teaching a skill as complex as reading is mainly a matter of getting the student moving in the right direction and providing him/her with feedback as he/she develops that skill to the best of his/her largely innate ability. And although with Smith (1985:4) one can say

> that nothing could possibly be invented that is significantly better than or even different from the methods and materials we have always had available

it can also be agreed with Widdowson that

> The expression 'it works' should not mark the end of investigation but the beginning.
>
> (Widdowson 1984a:36)

Also a developing interest in the communicative SL teaching has helped to provide the ESL teacher with a taxonomy for the different reader-writer relationships implicit in different genres of texts and the different situations in which and purposes for which they might have to deal with; however, between the new goals and objectives of the ESL present curriculum and the means and ways by which these might be reached there is a considerable gap. A study that aims at narrowing this gap will no doubt prove purposeful and, therefore, have some influence on the quality and success of LL experiences.

1.14 General assumptions and research targets

The major assumption of this thesis is that reading in SL is an act of communication between the reader and the text. This means that there is an ongoing interaction between the reader and the writer. As seen in this perspective, the realisation of meaning in actual reading becomes a matter of taking bearings on two points of reference (Widdowson 1990), viz systemic knowledge on the one hand, and schematic knowledge on the other, that is, knowledge not only of words and phrases on a sentential level but also background knowledge of the content area. This striving for equilibrium between the author's world and the reader's implies the occurrence of problems in reader-text interaction (Cavalcanti 1983) to solve which the reader resorts to specific strategies. This aspect (though emerging in recent research on schemata) has been largely ignored in SL textbooks and methodology.

So building on these assumptions and the foregoing discussions, this study aims at

(a) *identifying the range and variety of RS used by tertiary learners as they read textbooks in English*

(b) *identifying whether there are differences in strategy use in English and Arabic*

(c) *investigating whether the use of a strategy is affected by the familiarity/ unfamiliarity of text content*

(d) *identifying whether strategy use is affected by reading proficiency*

(e) *classifying the strategies identified into a framework that can be compared to existing taxonomies, that could be used by researchers and teachers.*

(f) *drawing implications from the study for theory and pedagogy*

1.15 Organisation of the thesis

This thesis is divided into three main parts organised in nine chapters. The first part which includes chapters 2, 3 and 4, provides the conceptual setting to the research problem. Here I discuss the concept of strategy in general and RS in particular, placing the former in a model of language production and reception, and the latter within three different models of reading as seen from the reader's point of view. This discussion is illuminated by a number of empirical studies that have looked at RS. The second part, which comprises chapters 5 and 6, and 7, deals with the data (its elicitation, analysis and description). It, therefore, forms a link between the problem as set out in the first part and the solutions that are considered in the third part. The third part comprises chapters 8 and 9 and covers the general discussion of the results and their interpretations as well as the theoretical and pedagogical implications.

The nine chapters can be summarised as follows:

Chapter *one* introduces the problem under investigation, the educational system in the Yemen, the ELT situation at the tertiary level, the aims of the thesis, its underlying assumption and its overall organisation.

Chapter *two* looks at two main issues concerning strategies, viz the criteria for defining them and their place in production and reception models of SLL. As far as categorisation is concerned an attempt is made to discuss them under two broad headings, viz LS (Rubin 1975, Wenden 1987)) and CS (Faerch & Kasper 1983b), highlighting the problem-solving aspect involved in strategy use.

Chapter *three* reviews approaches to the reading process from the reader's point of view, focusing on the theoretical perspectives as far as the RS are concerned. Here prominence is given to interactive models of reading and to schematic-knowledge based literature on reading comprehension, again stressing the problem-solving aspect in RS.

Chapter *four* reviews studies on RS and schematic knowledge. These studies concentrate on both problem-solving at word/sentence level (Olshavsky 1976-77) and on the interactive aspect of reading (Carrell 1983, Afflerbach 1990).

Chapter *five* describes the methodology used for data collection. It gives a detailed account of the five-stage model that has been used to collect data.

Chapter *six* gives an account of how each stage of the design has been analysed.

Chapter *seven* gives a statement of the results, pointing out the weaknesses and strengths of the reading procedures of the Yemeni readers.

Chapter *eight* provides interpretations for the findings, verifying the hypotheses set out in chapter three.

Chapter *nine* looks at the implications that can be drawn for theory and pedagogy.

1.16 Summary

This chapter has surveyed the educational system of the Republic of Yemen since 1839 and through this survey has highlighted certain aspects of the system that are relevant to the present study. These are the teaching of English in present day Yemen in general and the teaching of English at the tertiary level (Colleges of Education and Engineering)

in particular. The topic chosen has been identified and the remaining sections provided the general outline of the organisation of the thesis.

CHAPTER TWO

The Concept of Strategy in Learning and Communication

2.1 Introduction

It was stated in the opening chapter that this thesis draws from two fields of SLL theory, viz strategies and reading in its approach to the identification and analysis of the reading strategies (RS). This chapter reflects on the concept of strategy as is seen and understood in learning and communication. In the subsequent chapters, which narrow down to reading and reading strategies, a parallel will be drawn consistently between the concept as it is presented in this chapter and as it will be presented in reading.

There are a number of terms that need to be clarified as I go through this chapter which is intended to provide a general discussion of strategies. To start with, my use of the term 'strategies' will mean 'learner-strategies' as distinct from learning strategies (LS) and other types or classes of strategies that will be discussed later. In its simplest form the term learner-strategy will, therefore, refer to strategies used by learners as distinguishable from those employed by teachers.

The idea of investigating strategies was first thought of over fifteen years ago by Joan Rubin in her attempt to capture the purposeful activities learners engage in when they are face to face with the task of language learning (LL). This coincided with research concerns in the field of SLL and teaching, which showed a shift from the methods of teaching to learner characteristics and their possible influence on the process of acquiring a SL. Consequently, one of the leading educational goals of research on learner strategy has been the autonomous language learner (the term 'autonomous' meaning less teacher dependent and more self-dependent). The concept of an autonomous learner can be explained by discussing a learner-centred approach to LL.

2.2 A learner-centred approach to language learning

A shift in focus from teaching to learning implies many changes in the instructional process. To create a classroom in which learning flourishes, teachers need a thorough knowledge of the learner and the language and how it develops within the learner. This can be considered from two angles, viz the psychological and the pedagogical.

In psychology one way to consider LL is by looking at children's learning of language. LL is a process whereby children in interaction with others construct the language system, ie the meanings and functions of language and the symbols to represent them in oral and written forms. At the same time, as they are constructing the system they are also using the system to construct another one, namely the picture of the world. In Halliday's (1982) words they are using language and learning through language. In the course of developing both systems they are also learning about the language itself. These three facets of language development, viz learning language, learning through language and learning about language, as Halliday emphasises, are interrelated.

Research also confirms that children are active agents in their own learning (Jaggar 1985). Knowledge is not something that exists outside; it is constructed within the learner. All learning, especially the learning of languages, involves activity and discovery. Children will acquire new knowledge only when they can relate it to existing ideas or knowledge, that is, when it makes sense in terms of what they already know. The child reveals himself as a problem-solver rather than a rote learner,

> There is evidence that children make less progress in learning when parents try to teach them to talk by selecting, reinforcing correct usage and rejecting incorrect forms, or when parents pursue a topic of conversation of their own choice beyond the interest of their child
>
> (King 1985:21)

This examining of children's L1 acquisition is important in providing us with the theoretical impetus for understanding how learners approach the task of learning a SL,

and it is attributed to a changing view on the nature of the mind put forward by the theory and research in the field of cognitive science (Hunt 1982). Hunt's (1982:29) questions

> Do we learn what we learn primarily as a result of mere repetition - or of comprehension - or of linkage of new material to previously known material?

reveal the renewed interest in understanding the workings of the mind

> [...] all of them (the questions) pertaining to the learning of a SL directly or indirectly.
>
> (Wenden 1987:5)

As we move from the field of psychology to the field of pedagogy, we find that as teachers and researchers we have all observed that some students approach the LL task in more successful ways than others. That is, all things being equal, some students will be more successful than others in learning a S/FL. It is further assumed that successful learners will differ to some extent in the particular sets of cognitive processes and behaviours which they use to enable them to be successful. According to Rubin (1987:15),

> given the same language environment, the same target language, the same native language and the same language level, some learners will be more analytic in their approach to the learning task while others will be more intuitive, some will prefer to use written materials to access in FL while others will prefer to hear the language.

And as such there has been a steadily growing interest in considering the task from the learner's point of view and in changing the focus of classrooms from a teacher-centred one to a learner-centred one. In particular, there is a growing interest in defining how learners can take charge of their own learning and in classifying how teachers can help students become more autonomous (Ellis & Sinclair 1989).

In spite of wide differences between existing theoretical approaches to learning (Skinnerian, Piagetian, human information processing) most learning theorists would

agree that learning is best achieved when the students play an active role in the process. Being active means that students have opportunities to internalise information in ways which are meaningful to them. Internalisation - working through the information - is an active process. Hence, students need to work with new ideas and new experiences to make them their own. And as students become responsible learners they use a great variety of strategies. So how does one define strategies ?

2.3 Defining a strategy

In the military sense (from where the word actually comes), a strategy is the art or science of the planning and conduct of a war. In the social sciences, the word retains both the planning and conducting image. Despite this common feature, the definition has not been stable.

As such there are a number of ways in which a strategy can be defined. It can be simply presented as a construct, in the form of a definition; it can be defined by setting a set of criteria; it can be placed in a model of LL or it can be analysed in data and listed. All these attempts have been made in literature. There has, however, been very little theory to guide research on strategies. As O'Malley and Chamot (1990:2) rightly state in their latest volume on LS, even in as late as 1981,

> [..]there was no theory to guide our studies and few empirical investigations into the nature of learning strategies and their influence on second language acquisition. What did exist were a few descriptive studies of strategies used by effective second language learners.

This uncertainty and lack of theory in the field has resulted in researchers making all kinds of attempts at defining a strategy.

> Strategies have been referred to as 'techniques', 'tactics', 'potentially conscious plans', 'consciously employed operations', 'learning skills, basic skills, functional skills,' 'cognitive abilities', 'language processing strategies,' 'problem-solving procedures'
>
> (Wenden 1987:7)

These multiple designations, no doubt, point to the elusive nature of the term. There seem to be basically two approaches to the study of learner strategy, the criterion-based approach, which results in construct and the functional approach which leads to lists and taxonomies. Perhaps it is best to start with the criterion-based approach, which is also known as the theoretical approach and has been favoured by most researchers such as Wenden (1987), Bialystok (1984), Faerch (1984) and Faerch and Kasper (1983b), and then move on to the functional one.

a. The theoretical approach

Wenden's (1987) approach is inductive and she provides a set of criteria based on her own assumptions of learner strategies. According to the criteria set by Wenden

1. strategies are specific *actions* or techniques (eg repeating a phrase to remember it)
2. some strategies are observable (eg asking a question); some are not (eg makng a mental comparison)
3. strategies are *problem-oriented* (eg learners utilize them as a learning need)
4. strategies contribute directly and indirectly to learning
5. some strategies are *deployed consciously;* some may become automatized
6. strategies are amenable to change

Wenden's set of criteria provides a very broad definition, the risk being that its implementation leads to all actions taken by learners to be considered as 'strategic'. This is obvious in criteria 4 and 5. Besides the use of the word 'some' complicates matters and one is still left with the question "Which ones"? Two features that may prove helpful in Wenden's set of descriptions are that strategies are "actions" and that they are "problem-oriented". However, Wenden does not seem to be decided about the conscious part, *"some strategies are deployed consciously".*

Another criteria-based definition is provided by Bialystok (1984), Faerch (1984), and Faerch & Kasper (1983b) among others, who discuss the three criteria that are

particularly widespread in L1 studies (and two of which are also found among Wenden's list), viz. problematicity, consciousness and goal-relatedness or intentionality.

Problematicity refers to the notion that strategies are adopted when problems in their learning or production are perceived. According to Faerch & Kasper (1983b), the criterion of problem-orientedness presupposes a distinction between goals which the individual experiences no difficulty in reaching and goals which present themselves to the individual as 'problems'. In their terms only plans that relate to latter type of goals are considered strategic (I elaborate on this criterion below).

Consciousness refers to the learner's awareness that the strategy is being employed for a particular purpose, or the awareness of how that strategy might achieve its intended effect. Faerch & Kasper (1983b), however, are careful to note that consciousness is likely a matter of relative degree and that individual and situational constraints may determine the extent to which consciousness may be achieved. Bialystok (1984:101) too, seems worried about the criterion 'consciousness'

> Consciousness does not determinate among the varieties of behaviour - most mental processes are relatively automatic but it is difficult to accept 'automatic' as equal to 'unconsciousness'

Consciousness is clearly not a constant holding for specific types of plans across all individuals. As Sharwood Smith (1979) clearly point out different individuals may be more or less able to become aware of their own internal operations, implying consciousness-raising process. The opposite situation can also be true, that individuals may automatize what was at one stage consciously employed plans. On the basis of this Faerch and Kasper (1983b:35) classify plans as

- plans which are <u>always</u> consciously employed
- plans which are <u>never</u> consciously employed

- plans which to some language users and/or in some situations may be consciously used and which to other language users and/or in other situations are used unconsciously.

Conscioiusness as used in the strategy studies is thus related to plans that are employed in the execution of a behaviour. In this sense it is different from the notion of consciousness in the Acquisition-Learning Hypothesis of Krashen (1985). Krashen maintains that adult SL learners have two ways of developing competence in a second language,viz acquisition, which is a subconscious process (identical in all important ways to the process children utilize in acquiring their L1), and learning which is a conscious process that results in 'knowing about language'. Thus in Krashen's terms it is the conscious attention to rules that distinguishes language acquisition from LL. Krashen and his associates had their subjects state the rule when they made judgements on the basis of rule; there is thus an emphasis on rule articulation. It is, however, difficult to understand Krashen's notion of consciousness since he has not provided a definition of the term (see also McLaughlin 1987).

Despite the fact that very little empirical support is available for this criterion, even in strategy studies, it has been preferred by most researchers in their definition of strategies (eg Rubin 1987, Smith 1981, Rubin & Henze 1981). Perhaps, the issue of consciousness is of considerable interest to IL researchers as it

> delimits the subgroup of plans which can be characterized by means of introspective techniques from other types of plans.
>
> (Faerch & Kasper 1983b:36)

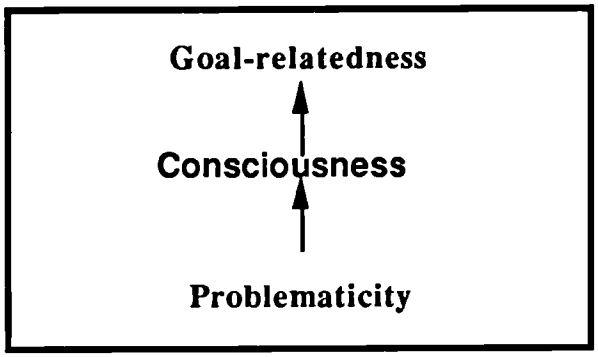
Intentionality or *goal-relatedness* , the third criterion, refers to the control over these strategies so that particular ones can be selected from the range of options and deliberately applied to achieve certain effects.

Bialystok's following remark brings out the interrelation between the three criteria.

> [...]the concept of strategy in L2 learning and communication seems constantly to refer to the use of devices to solve problems

> by learners who are in control of the selection of these devices and at least somewhat conscious of their application and their effect
>
> (1984:40)

Faerch (1984), on the other hand, postulates a hierarchical relationship between them in the following manner:



To him the relation is that of one way implication - problematicity implies consciousness and goal-relatedness, whereas the opposite is not necessarily the case. The figure tries to convey that goal-relatedness is a highly general aspect of human behaviour; that consciousness holds true of some goal-related tasks and that individual may be conscious about behaviours without experiencing problems.

An important implication of this relationship is that, if strategies are defined in terms of problematicity, the result is a highly specific concept which can be investigated fairly precisely. But if one selects the criterion of goal-relatedness, the result is a very broad concept of strategy, and it may become difficult to differentiate between strategic and non-strategic learning and communication.

The common ground between the definitions provided by Wenden (1987) and by Faerch (1984) is that problem-orientedness and consciousness are considered as vital. Another problem that emerges at this juncture and that can be related to both these criteria is that of disentangling 'strategy' from 'process'.

2.3.1 Strategy vs process

The interchangeable use of these two terms implies that both terms refer to the same class of phenomenon. For example

> Simplification is understood as the act of simplifying, the strategy of communication and the process whereby specific meanings are communicated on specific occasions.
>
> (Lavenston & Blum 1977:52)

Some researchers use the term 'strategy' when referring to a specific subclass of process, thereby implying an opposition between non-strategic versus strategic processes (Selinker 1972). In fact, Selinker posits five central processes for language learning, viz

1. language transfer
2. transfer of training,
3. strategies of second LL
4. strategies of second language communication
5. overgeneralisation of TL linguistic material.

He offers 'simplification' of the TL as an example of 3, but it is unclear why such a strategy does not assume equal status with the processes of 1 and 5.

Another way of handling the categories 'process' and 'strategy' has been put forward by researchers who regard them as relating to the same superordinate class of mental activities but as being distinguished into subclasses by certain defining criteria. Lavenston & Blum (1983:125), for example, use a temporal dimension as a defining criterion. They define strategies as

> [.....] the way the learner arrives at a certain usage at a specific
>
> point

and process

> as the systematic series of steps by which the learner arrives at the same usage over time.

This temporal criterion implies that a single usage can indicate a certain strategy. Thus if one traces a learner's specific usage to his L1 the strategy used will be taken as a transfer. If the same specific usage is repeated over time by the same learner in the same contexts then one can say that a certain aspect of the learner's interlanguage has been formulated as a result of a process of transfer. In this view, the distinction between processes and strategies is not necessarily one of +/- consciousness rather, as Blum-Kulka & Lavenston would say

> the difference is one of levels of analysis; processes are underlying cognitive principles we are searching for in analysing strategies.
>
> (1983:125)

Processes then become inferrable from strategies, just as strategies are inferrable from interlanguage performance. A single form used as a strategy of communication can either disappear from the learner's speech or become fossilized and part of a stable interlanguage.

In a different attempt, Bialystok (1978) distinguishes between the two by the obligatory/optional criteria (strategies being optional mental activities) and so on.

In general linguistics, 'process' is used in a sense in which it is primarily opposed to product (for example, in expressions such as 'process-oriented' as against 'product-oriented'). Brown (1976:36) defined the term 'process' as

> [....] a continuing development involving a number of changes.

Klaus & Buhr (1976:990) give a similar definition

> [....] a dynamic sequence of different stages of an object or system.

This is consistent with Faerch & Kasper's (1983b) use of the term and is also consistent with the sense of 'process' that lies at the back of such expressions as 'the

process of L2 acquisition' the 'communication process' and the 'reading process' and it is in this sense that the term 'process' will be used henceforth.

It is clear that in an attempt to delineate the concept theoretically this approach to define strategies varies in construct (usually by comparing and contrasting it to similar concepts) but points consistently to a few defining features. For example, Rubin (1975:43) refers to strategies as

> the techniques or devices which a learner may use to acquire knowledge.

Stern (1975:310) defines them as

> [..] general more or less deliberate approaches used with specific techniques

while Skehan (1983 :1) proposes that

> strategies are ways in which the learner chooses to approach the task of learning, chooses to use his ability to solve the LL problem.

b. The functional level

At the functional level the concept of strategy has been defined by generating structural lists of the examples of them. To this end a variety of taxonomies and classifications have been proposed. There are two sub-levels here. The first distinguishes broad classes by identifying strategies according to function. The classification is usually binary, distinguishing between strategies in pairs: social and cognitive (Fillmore 1976), learning and communication (Bialystok 1984), production and reception (Faerch 1984, Ellis 1986), cognitive and metacognitive (Chamot 1987, O Malley 1987), direct and indirect (Oxford 1990).

The second level documents the range of strategies that can occur to serve any of these functions. Thus, one finds taxonomies of communication strategies (Tarone 1977),

social strategies (Fillmore 1976), learning strategies (Stern 1975, Naiman et al 1978, Rubin 1975), and so on. Although the various structures in the set may differ in their conditions of applications, they share a common goal which is specified by the functional type.

As is obvious from the title of this chapter, I will follow this binary division for the rest of this chapter in that I will be looking at learning strategies (LS) and communication strategies (CS). I will then discuss strategies of production and reception within the CS framework. However, as the distinction between LS and CS has been particularly controversial, I will first attempt to look into this controversy.

2.4 Learning strategies versus communication strategies

Corder (1981) has observed some distinction between LS and CS. According to Corder LS contribute to the development of IL systems, whereas CS are used by the speaker when faced with some difficulty due to his linguistic ends outrunning his communication means. This distinction is further elaborated by Tarone (1983) who thinks that the term 'CS' relates to the attempt of two participants in a discourse to agree on a meaning in a given situation where meaning structures do not seem to be shared (p. 65, see also 2.6), while a LS is an attempt to develop linguistic and sociolinguistic competence in the TL.

One reason for this confusion, as put forward by Corder, can be that in both cases the data for investigating are the same, namely, utterances in the IL of the speaker. When a particular utterance is defined it becomes difficult to say whether it is the result of the learner's IL system or the result of some CS. It may just be a regular characteristic of his IL grammar which the learner has created for himself or it may be an item borrowed for communicative purposes.

Bialystok (1983 :101) attempts to make the issue clearer

> One expedient for highlighting their differences is to consider the extent to which the strategy is based on a feature of the learner or a feature of the language. The former results in LS, the latter in CS. Both may be accompanied by varying degree of learner control.

She further stresses that LS refer to activities in which the learner may engage for the purpose of improving TL competence and hence are revealed by the learner. CS, on the other hand are revealed through linguistic analyses of the learner IL. They indicate the extent to which the learner's utterances in the TL are affected by the NL (Taylor 1975), or the procedures used to express concepts for which TL words are unknown (Tarone 1977), or the extent to which and the manner in which the lexicon of the TL is simplified (Blum & Lavenston 1983).

However, despite such views, the relationship of CS and LS is not always so clear since, in the process of clarifying meaning, learners may uncover new information which they then store in their language system. Thus although use of CS may lead to learning, the purpose for their use is better communication. There is no doubt of the need for some attempt to disentangle LS from CS (just as in the case of 'strategy' and 'process') and what seems to be missing here is the notion of strategic competence.

Strategic competence as one of the components of communicative competence refers to the learner's ability to solve communication problems by means of strategies. According to Bachman (1990) recent formulation of communicative competence provides a much more inclusive description of the knowledge required to use language than did earlier skill and component models in that they include, in addition to the knowledge of grammatical rules, the knowledge of how language is used to achieve particular communicative goals, and the recognition of language use as a dynamic process. This last involves the assessment of relevant information in the context, and a negotiation of meaning on the part of the language user. Canale and Swain (1980) include strategic competence as a separate component in their framework of

communicative competence. They describe strategic competence as providing a compensatory function when the linguistic competence of the language user is inadequate (see also definitions of CS below). Canale (1983) has extended this definition of strategic competence to include both compensatory characteristic of CS and the enhancement characteristic of productive strategies.

So much then for the controversy existing between LS and CS and the definition of a strategy in this work. I can now move on to look at LS and CS separately.

2.5 Learning strategies (LS)

The literature on LS in SLA emerged from a concern for identifying the characteristics of effective learners. A number of LS have been identified and attempts have been made to classify them (Naiman et al 1978, Rubin 1981, Wenden 1985, O'Malley et al 1985 among others). Though classification schemes differ from one another their complementary and consistent points make it possible to summarize three major kinds of strategies, viz metacognitive, cognitive and social.

a. Metacognitive strategies

O Malley et al (1983) refer to metacognition as knowledge about cognitive processes, and regulation of cognition through such processes as planning, monitoring and evaluation. *Planning* refers to learners' conscious efforts to decide what and how they should learn. *Monitoring* in Krashen's (1982) sense, refers to learners' using their explicit knowledge to modify their linguistic production when they have time to do so and are paying attention to form. Research on metacognitive strategies has extended to include monitoring input as well as output (Bialystok 1981) and overseeing the learning process while it is in progress (Wenden 1985). *Evaluation* refers to learners' questioning the effectiveness of the strategies they use.

b. Cognitive strategies

Cognitive strategies, on the other hand, are the steps or operations used in learning or problem-solving that require direct analysis, transformation or synthesis of learning materials.

Rubin (1981) identified six general cognitive strategies in a report on conventional LL setting with young adult learners. Her study dealt with specific task-based classroom activities. Using directed self-reports, she produced a list of six general strategies: clarification/verification, guessing/inductive inferencing, deductive reasoning, practice, memorisation and monitoring

Clarification refers to those strategies which learners use to verify or clarify their understanding of the new language. In the process of creating or confirming rules in a new language, they may seek confirmation of their understanding of the language. They may also seek to clarify the communication rules of the specific language variety they are attempting to learn. *Guessing/inferencing* refers to strategies which use previously obtained linguistic or conceptual knowledge to derive explicit hypothesis about the linguistic form, semantic meaning or speaker's attention. *Deductive reasoning* is a problem-solving strategy in which the learner looks for the uses of general rules in approaching the F/SL. Here again, according to Rubin, the learner uses previously acquired linguistic or conceptual knowledge to derive specific hypothesis about the linguistic form, semantic meaning or speaker's intention. The difference between inductive/deductive reasoning is that in the former the learner is looking for a specific meaning or rule whereas in the latter he is looking for and using more general rules. As Stern (1975:313) points out

> [...] the good language learner constantly probes the language and forms hypothesis about it in order to discover rules and relationships and to recognise the discrete elements into an ordered whole or system.
>
> (quoted in Rubin 1987:24)

Practice contributes to the storage and retrieval of language while focusing on accuracy of usage. *Memorisation* is a similar strategy. *Monitoring*, in Rubin's list, appears to be a combination of cognitive and metacognitive aspects, the learner observing how a message is received and interpreted by the addressers, and then deciding what to do about it.

Rubin's list of strategies provide some useful insight to cognitive orientation and suggest considerable scope for self-awareness in the process of learning.

c. Social strategies

The third group which is referred to as social strategies includes practising language through use of the target language in social situations. Strategies in this group involve using whatever means are necessary to get a message across, making use of resources in the environment for language practice and co-operating with others in social situations. Fillmore (1979) describes a number of social strategies used by five Spanish-speaking children learning English in play situations with native-speaking children. To begin with, the children adopted the strategy of joining a group and acting as if they understood what was going on, even if they did not. Later, they sought to give the impression that they could speak the language by utilizing a few carefully chosen words. They also relied on their friends to help them out when they were in communication difficulty. Other social strategies have been identified by Wenden (1985) and O'Malley et al (1985).

2.6 Communication strategies (CS)

In this section I will first try to examine CS in isolation and then move on to speech production and reception (speech meaning both spoken and written, in other words, referring to the four skills, viz speaking, writing, reading and listening). Reception strategies are directly related to reading; production strategies will be considered in

order to understand the complete communication circle. The best I can do is to give a broad characterisation of CS which will hold for most of the remaining discussion. In order to do so a distinction has to be introduced between two types of SL use which occur side by side in a great variety of SL discourses.

First, there is the possibility of learners to use their ILs productively and receptively without experiencing any problem in planning and executing their utterances, or in taking their interlocutor's speech (Faerch & Kasper 1983a). This 'unproblematic' IL use is seen from the learner's point of view and thus focuses on the production and reception process: the result may be native-like or learner specific, or erroneous. Secondly, the learner might not find it possible to use his IL in an unproblematic way for reasons to be discussed below. In this case, he will have recourse to strategies in order to cope with such problems. One has, therefore, to keep a distinction between strategic and non-strategic use of language in mind when considering the definitions of CS.

There are four different approaches to the study of CS and these have been outlined in '*Strategies in Interlanguage Communication*' edited by Faerch and Kasper (1983a). These approaches have been put forward by Tarone et al (1976), Corder (1981), Tarone alone (1983) and Faerch and Kasper themselves (1983b).

The approach adopted by Tarone, Cohen and Dumas (1976) is firmly rooted in the tradition of error analysis, ie the erroneous aspects of learner language is explained as the product of various process-level phenomena like transfer and generalisation. CS are not seen as a specific way of communicating in IL.

Corder's (1981:101) survey represents a markedly different way of defining CS

> A working definition of CS is that they are a systematic technique employed by a speaker to express his meaning when faced with some difficulty.

CS are seen to account for performance data, not when these are erroneous but when they have been produced by performance under specific circumstances, irrespective of whether they are in accordance or not with TL, ie whether they are correct or erroneous.

Faerch & Kasper locate CS within a general model of speech production and define them

> [....] as potentially conscious plans set up by a language user in order to solve problem in communication.
>
> (1983a:2)

They suggest that a definition of CS will have to be based on the research interest of the analyst and claim that the criteria of 'problem-orientedness' and 'consciousness' are relevant from the perspective of F/SLL and teaching. According to this definition, CS are located in the individual user who is the person to experience the problem and to decide on the strategic plan for its solution.

Tarone, on the other hand, defines CS in interactional terms as

> a mutual attempt of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared
>
> (1983a:2)

These four different approaches, viz the error-analysis based (Tarone et al), the systematic technique approach (Corder), the psycholinguistic one (Faerch & Kasper) and the interactional approach (Tarone) to the definition and general classification of CS prove that there is a considerable disagreement as to whether CS should be considered a particular type of psycholinguistic process (Selinker 1972), a particular type of psycholinguistic plan (Sharwood-Smith 1979, Faerch & Kasper 1983b) or a particular type of interactional process (Tarone 1983)

In this study I will henceforth concentrate on the two major ways of looking at CS

1- The interactional one

2- The psycholinguistic one

This is because the other definitions seems to fall within the continuum of which these two are the extremes. According to the interactional definition CS are co-operative in nature: the different linguistic codes of the interlocutors necessitate a negotiation of the message as intended by one and perceived by the other discourse participant; the learner and his interlocutor are aware of there being a communicative problem which they then attempt to solve on a co-operative basis. Tarone (1983) proposes the following criteria characterising a CS:

1- a speaker desires to communicate a meaning X to a listener

2- the speaker believes the linguistic or sociolinguistic structure desired to communicate meaning X is unavailable, or is not shared with the listener

3- the speaker chooses either to avoid, ie not to communicate meaning or attempt alternate means to communicate meaning.

The psycholinguistic definition, on the other hand, relates to the learner, more precisely to the problems experienced by the learner in speech reception and in the planning and execution of speech production. The definition makes no claims about the co-operative nature of CS: the strategy adopted by the learner may be co-operative, ie the learner may try to solve his communicative problem by appealing for assistance from his interlocutors, but this is not a necessary condition; the learner may also decide to find a solution himself, without the co-operative assistance of the interlocutors. This implies that

> [.....] the learner may make use of a CS without signalling to his interlocutor that he is experiencing a communicative problem.
>
> (1983d:212)

One significant difference between the two definitions of CS is hence that CS can be directly identified in performance data according to the interactional definition, whereas this is not always the case with strategies defined on the basis of the psycholinguistic

definition. In the latter case the analyst is forced to rely on indirect evidence to a very large extent.

The psycholinguistic definition enables us to specify the conditions for a particular IL item to be classified as a result of a CS rather than of IL rule application. These conditions are that

1- the learner has experienced a problem in reaching his communicative goal by means of his available linguistic resources,

2- the learner has attempted to solve this problem by setting up a strategic plan which may or may not be conscious in the given situations,

3- the data in question have been produced on the basis of this plan.

The notion of problem is central to this definition. In the interactional definition, in order for verbal interaction to flow smoothly, there must also be conversational rules which regulate the receptive aspect of communication, ie rules which specify general principle of how to respond to one's interlocutors' contribution in a co-operative way. Observing the receptive co-operative principle (Grice 1975) is a necessary condition for any successful verbal interaction. However, in certain types of interaction it is not sufficient for ensuring understanding. For example the co-operative principle might conflict with other interactional principles. The factors which might influence the NS's option for one or the other principle are manifold, among others, the learner's TL, level of proficiency, the relative social status of the participants and the urgency of the content matter to be communicated.

In the psycholinguistic terms, CS are treated as the mental phenomenon which underlie actual language behaviour. When the interactional perspective is taken CS are seen as attempts to bridge the gap between the linguistic knowledge of the learner and the linguistic knowledge of his interlocutor in real communication situations.

However, as it has been pointed out (Faerch & Kasper 1983d, Ellis 1986), there are several difficulties with this interactional definition. First it is difficult to apply it to monologue, when the learner's interlocutor is not present, and there is no overt negotiation of meaning. Second, the application of CS can take place without this becoming manifest in interaction. In Tarone's definition, only those CS that are marked in performance by some form of appeal on the part of the learner are considered.

For this study the psycholinguistic approach will be adopted. However, Tarone's definition will also be referred to as a supportive insight for further discussions.

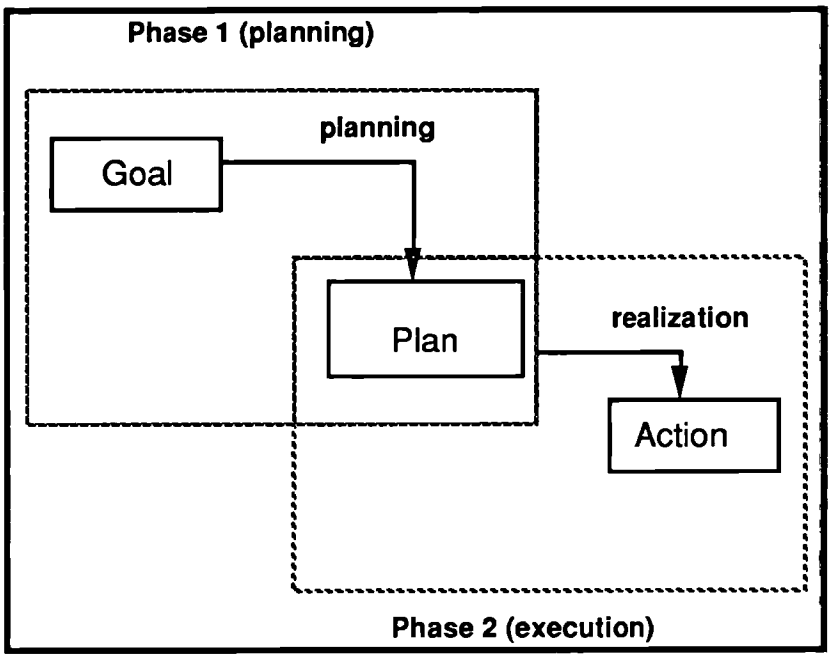
2.6.1 Communication strategies in production

Faerch and Kasper (1983b), as we have seen in the previous section, place CS in a particular kind of plan which is activated when the initial plan cannot be carried out. The user is forced into substituting a strategic plan for his original production plan, because he has insufficient means to implement the production plan. Faerch and Kasper's (1983b) model of language production, which draws on the work of cognitive psychologists such as Miller et al (1960) and Clark and Clark (1977), includes a planning phase (constituting of goal, planning and plan) and an execution phase (comprising plan, execution and action). In the planning phase, the language user selects units and items which he considers most appropriate for establishing a plan. The product of the planning phase is a plan which controls the execution phase. The execution phase consists of neurological and physiological processes, leading to the articulation of the speech organs, use of gestures, signs or writing.

As part of the planning phase the individual has to assess the situational conditions in order to select the most appropriate plan. This assessment is, however, not restricted to planning only - deciding on goals to set up, clearly depends on assumptions about what

can be achieved in a particular situation. Furthermore, on the basis of such assumptions, individuals may avoid or engage in different types of communicative situations.

Figure:2.A
A model of language use
(adapted from Faerch & Kasper 1983b)



The planning process is primarily sensitive to three variables: the communicative goal, the communicative resources and the assessment of the situation. Through situational assessment the individual builds a hypothesis about which parts of his linguistic knowledge are shared by his interlocutors. The fact that the language user builds a hypothesis about his resources in a specific situation does not imply that he will always produce utterances which are controlled by the plans based on the resources. He may have to deliberately go beyond what he considers shared knowledge in order to solve a communicative problem.

Therefore, according to the model, problems within the planning phase may occur either because the linguistic knowledge is felt to be insufficient by the language user, relative to a given goal, or because the language user predicts that he will have

problems in executing a given plan. The former type of behaviour is particularly characteristic of IL communication, as IL systems are said to be typically restricted compared to L1 systems. Not surprisingly, most of the literature on CS aims at solving problems due to insufficient linguistic knowledge. The latter type of problem is characteristically associated with the learner being concerned with fluency or correctness. A change of plan may result because of the language user trying to prevent the problem.

Problems within the execution phase have to do with the retrieving of items or rules which are contained in the plan. The difference between anticipating fluency or correctness problems and experiencing retrieval problems in execution is that in the former case, it is possible to avoid getting into a problem by developing an alternative plan, whereas in the execution phase problems are there and have to be solved.

When in the course of interaction the learner cannot find the solution needed, the choices open are

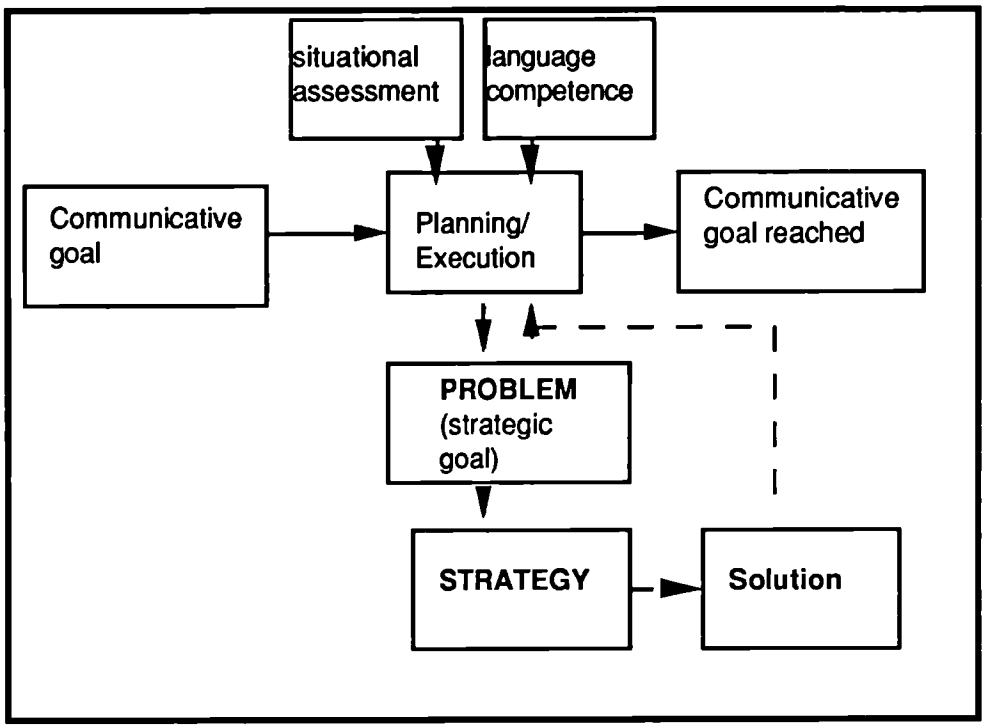
1- to give up completely

2- to reduce the original communicative intention

3- to try to make use of the communicative resources available to solve the problem (Faerch et al 1984).

The result of the discussion is that there are strategic plans which are not identical with plans established in order to reach a communicative goal. The central issue is the problem and the solution is reached by employing a strategy.

Figure 2B
Communicative and strategic goals.
(after Faerch and Kasper 1983b and Bachman 1990)



2.6.2 Communication strategies in reception

Surprisingly, CS are usually referred to strategies in speech production rather than both reception and production. Studies which look into speech reception from the particular angle of how learners cope with problems are, therefore, scanty (except Faerch & Kasper 1980, Faerch & Kasper 1983c, Faerch et al 1984).

The criterion of problematicity for receptive strategies is expressed in all these studies. Problematicity, when applied to speech reception, means locating the criterion within a wider model of speech reception. Both Clark and Clark (1977) and Faerch (1984) outline three types of procedures in such a model:

1- procedures (mental) that utilise knowledge, linguistic or other, at various levels of delicacy for the interpretation of incoming speech (top-down processing)

2- procedures (mental) that utilise incoming data by encoding gradually larger segments, moving from phonological and morphological to syntactic and semantic decoding (bottom-up processing)

3- procedures (behaviours) that utilise interpretative possibilities in the context by means of repair work.

The first two types of procedures are undoubtedly used by all language users, whether they are exposed to the NL or FL, although the amount of top-down processing relative to bottom-up processing may vary with different situations. It is probably the case that the two types of procedures are generally activated unconsciously, without the individual experiencing a problem, which would exclude them from being 'strategic' in the narrow sense of the word. But as there is some evidence (Carrell 1983, Faerch 1984) that procedures 1 and 2 may also be used in problem-solving situations, they may be characterised as potentially strategic. I, therefore, consider it valid to include a detailed discussion of these processes at this juncture.

If we go back to the speech production model where the speaker's starting point is the communicative goal, we find that at the other end of the communicative chain the receiver is trying to reconstruct the sender's communicative intention by decoding the message. Terms such as 'perception' (eg Tarone 1983) and 'comprehension' are often used in connection with speech reception, the distinction between the two being that perception refers to the processes used by the language users in order to identify units of phonology and orthography, whereas comprehension refers to processes at the higher levels, processes which enable the receiver to reconstruct the producer's intended meaning.

The term 'mental lexicon' has been used to refer to the internalised systems of knowledge we use when we perceive or produce words. The representation of a word in the mental lexicon is referred to as the word's lexical entry. This entry contains

semantic, phonological and orthographic information contained in the word's lexical entry. This process is known as lexical access. In reading, lexical access involves using information from a printed word to gain access to that word's entry in the mental lexicon. In understanding spoken language, lexical access is achieved by using information from the acoustic representation of a word.

Many models of the mental lexicon have been suggested, the most prominent being Morton's Logogen Models (Morton 1968,1978). Lesgold and Perfetti (1981:389) summarise Morton's theory in the following manner:

> Morton proposed that for each word one is able to recognise, there is a response unit, called a logogen, that is sensitive to the set of auditor, visual and semantic features associated with the word. When the number of features that are constantly active exceeds the logogen threshold, the unit is automatically activated, and all the features are made available to the rest of the cognitive apparatus. Because logogen activation is automatic and does not require attention, the logogen theory is a theoretical forerunner of automaticity theories of reading.

Also relevant to the present discussion are the following two components of the information processing model (Harris & Coltheart 1986):

1- The visual word-recognition system which accepts, as input, information gathered from a printed or written word, and produces, as output, an abstract identification of that word. One influential model has been put forward by Johnson & McClelland (1980), who proposed four processing stages: letter position preprocessing, feature detection, abstract letter detection and word detection.

2- The auditory word-recognition system represented by the so-called Cohort Model (Marslen-Wilson & Tyler 1980) which proposes that there exists a set of auditory detectors, closely analogous to the visual word detectors in the Johnson-McClelland model. In this model the auditory word detectors are activated by input from a spoken word, and an essential aspect is that activation begins as soon as the first sounds in the word are heard. This is called the word initial cohort, and as more and more of the

presented word is heard, the size of this cohort will shrink until eventually only one word detector remains activated.

The basic principle of the processing is that language users exclusively use the incoming flow of sound and the linguistic knowledge in speech comprehension. The result is often partial comprehension (either in the sense of a mismatch between the speaker's communicative intention and the hearer's interpretation of this, or in the sense that the hearer experiences a mismatch between what he has been able to interpret and something more which he believes the speaker have intended).

In clarifying receptive problems implied by the third type of situation, mentioned earlier, the learner would resort to initiated-repair-work strategies and request the interlocutor to self-repair, ie resorting to interactional strategies (Faerch et al 1984).

In comprehending or interpreting therefore, the same processes mentioned in production (assessment, planning and execution) are involved. The three assessment and planning components as described by Johnson (1982:149) in Bachman (1990) are as follows:

(a) The listener/reader must scan the utterance to extract information that he requires; it is information he wants to receive.

(b) The listener/reader approaches the task prepared to search for certain pieces of information in his interactant's words. Once this information comes it has to be assessed according to the speaker's aim. .

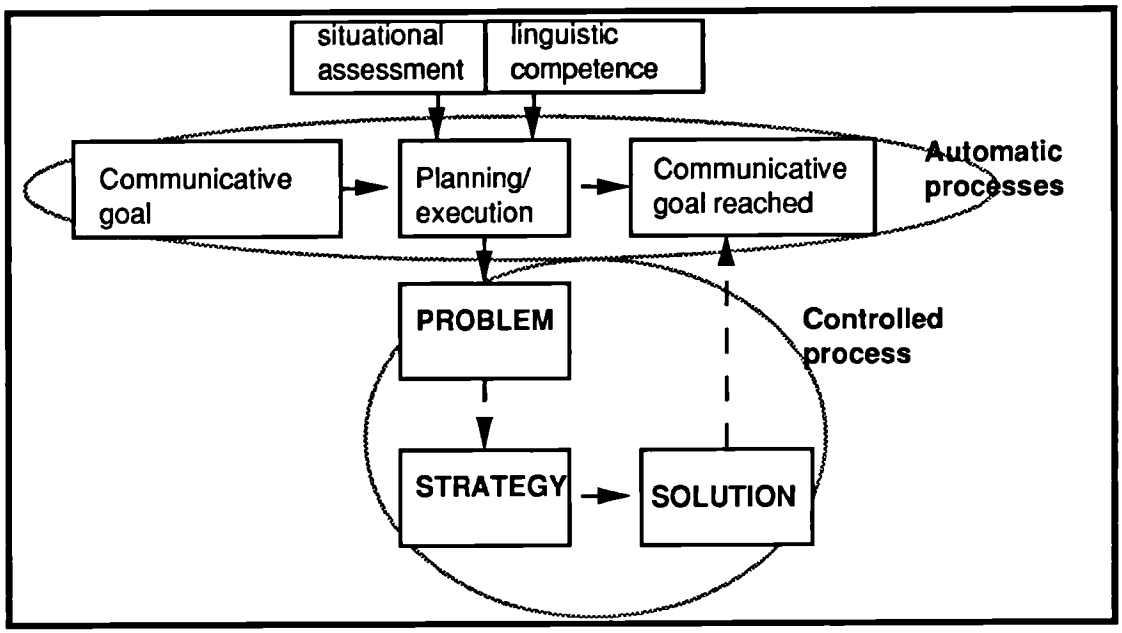
(c) The listener/reader compares, then, what he is told with what he wants to know, identifies any mismatch and , as a third phase, formulates his next utterance.

The interpretation of discourse, in other words, requires the ability to utilize available language competencies to assess the context for relevant information and to then match

this information to information in discourse. A mismatch between the new information to be processed with relevant information that is available and the mapping of this onto the efficient use of existing language abilities may result in some sort of controlled processing (see Figure 2C below).

Figure 2C

A model of language reception: An ongoing cycle of automatic and controlled processes.



The reception model therefore is a replica of the production model (2.7.2.1), the only difference being in going from the solution stage directly towards the achievement of goal because planning in reading or rather in reception takes a different route.

2.7 Planning and reading

Planning and reading are integrated in many models (Goodman 1967, Rumelhart 1977, Cavalcanti 1983, among others).

Cavalcanti, for example, relates plan creation and plan interpretation to productive and receptive communication. The following pattern emerges from her discussion. Productive communication results from plan creation and receptive communication is plan interpretation. Reading, within the psycholinguistic framework has, in fact, been

investigated from the point of plan creation, ie researchers have attempted to single out plans and goals that readers should pursue in their attempt to extract information from text. As my discussion on reading in the following chapter will show, readers do not, however, extract information from text; they interpret the writer's intentions (plans and goals) in their interaction with text. I, therefore, agree with Cavalcanti that reading is primarily plan interpretation, involving plan creation when breakdowns arise in communication. From Cavalcanti's point of view when plan interpretation is carried out smoothly, the process is primarily automatic (procedures 1 and 2 in the reception model) but when plan creation is required, the process is primarily controlled. Reading is, therefore, assumed as

> [....] an ongoing combination of controlled and automatic processes.
>
> (1983:53)

In productive communication planning and pausing are said to be directly linked. Planning pauses in receptive communication are assumed to be related to

> the consideration of isolated or global problems in plan interpretation within a problem-solving framework or within a personal evaluation-of-information framework. The problem-solving framework is related to problems which can be traced to text, ie problems due to the reader's lack of grammatical and/or sociolinguistic competence.
>
> (Cavalcanti 1983:53)

This discussion leads to the two types of knowledge that are usually mentioned in the literature on automatic and controlled processing (Faerch & Kasper 1985), viz declarative and procedural. The former comprises IL rule knowledge at all linguistic levels organized in more or less analysed, ie structurally transparent and articulated for (see eg Bialystok 1981). In order to activate such knowledge in communication, and to increase it through learning, a second type of knowledge is assumed. This is the procedural knowledge which intervenes between the declarative knowledge and observable performance, and comprises the cognitive and interactional processes activated in reception, production and language acquisition. As most of these processes

are activated automatically, ie do not enter short term memory, they are not accessible for direct study. However, activities that involve slow and controlled processing offer the possibility for introspective study. Furthermore, sudden breakdowns of automatic processing, such as when the learner is facing a problem in reception or production due to lack of relevant declarative (linguistic or other) knowledge, often call for attended processing, ie the use of strategies. These attended processes are then within the realm of introspection and direct study.

The above discussion on production and reception provides us with different classes of CS which can be presented as follows:

Table 2.7.1
Types of CS in production and reception.

Problem-identifying strategies (Olshavsky 1976-77)	**Problem-solving strategies** (Faerch & Kasper 1983b)	**Problem-avoidance strategies** (Faerch & Kasper 1983b)
question formulation	clarification, association, inferencing, and monitoring (Rubin 1975)	topic avoidance, message abandonment, semantic avoidance and message reduction (Corder 1983)

As is clear from the above Table, Faerch and Kasper have classified CS into problem avoidance (avoidance behaviour) and problem solving (achievement behaviour). Following Cavalcanti (1983), Olshavsky's (1976-77) problem identification has been added to this classification. Problem avoidance at the discourse level is subdivided based on Corder's (1983) subclasses. At one extreme Corder places 'topic avoidance' (a refusal to enter into discourse because of total linguistic inadequacy); a less extreme form of topic avoidance is message abandonment - an attempt of trying but giving up. A less acute form of this is 'semantic avoidance', that is, saying something slightly different but still broadly relevant to the topic of discourse. Finally, the least acute form

of this would be 'message reduction', that is, saying less precisely what you intended to say.

All the problem solving strategies are risk-taking, in that they run the danger of failure. These can be subdivided into Rubin's (1975) LS, viz clarification, association, monitoring and inferencing. These strategies will be further elaborated in chapter 4 and the analysis chapters, 7 and 8.

Therefore integrating all the foregoing discussion and building on the various definitions highlighted in this chapter, my own definition of a strategy will include the 'problem' factor as a defining feature of the concept. It will also include the 'consciousness' criterion for plans that are both always consciously employed and sometimes (or potentially) consciously employed and will stand as follows

> *A strategy is a potentially conscious plan or action set by the learner to solve problems in learning and/or communication.*

One more important issue, related to the aspects of strategy use, is the learner characteristic issue to which I now turn.

2.8 Learner variables in strategy research

In strategy research in general there has been no consistency in integrating learner variables, except perhaps in the study by Naiman et al (1978). In a learner-centred study, the learner characteristics are very important. The learner's personal characteristics have a bearing on how and what he learns. The students' sex, age (Burstall et al 1974), LL aptitude (Carroll 1959), educational background, and previous language experience are all important factors. In this section, characteristics that are most likely to influence the use of strategies will be taken up for further discussion. The factors will be discussed here in some details in order to bring out their relation to

the use of strategies, but they will not be the subject of any separate inquiry. These factors are age, personality, cognitive style, motivation, attitude and learning style. Aptitude and intelligence will not be considered here because I agree with Naiman et al that

> Beyond general verbal intelligence and language aptitude, it is believed that the learner approaches any learning task with his own individual cognition or learning style.
>
> (1978:4)

(a) Age

The age factor is often discussed in relation to what the brain can do. One reason for this is that there is a common belief that children are better language learners than adults. Prior to adolescence the major hemispheres of the brain specialise so that one hemisphere assumes control over a number of analytic processes which are essential in language use. The gradual lateralisation of the language functions in the left hemisphere has led psycholinguists to suggest that there exists a 'critical' period for language acquisition (LA). In fact, the critical period hypothesis states that there is a period when LA takes place naturally and effortlessly. Some evidence to support this hypothesis was supplied by Lenneberg (1967) but his evidence, based on speech disorder studies, does not demonstrate that it is easier to acquire language before puberty. Only where pronunciation is concerned is an early start an advantage. There is now, however, fairly substantial evidence that younger children are not generally as efficient as adolescents or even adults (e g Faerch et al 1984, Oller & Richards 1973). One obvious difference between the young child and the adult is the ability of the latter to comprehend language as a formal study

> He (the adult) is more cognitively mature, has a longer attention span and longer short term memory span. Many SL learners can read, have at least a primary education, and have indeed been taught in school to reason and use reading skills in approaching new learning situations and tasks.
>
> (Oller & Richards 1973:75)

In strategy research the age range of learners has not been systematically covered. Fillmore (1976) worked with five-year olds; Rubin's research mostly used young adults as subjects, while Naiman et al (1978) studied adults from university environments. Naiman et al and Rubin take account of the reflections of learners (since they are adults) about their own learning. For instance, both researchers' use of 'monitor' strategy implies a capacity to relate to an evaluative framework and to distance oneself from the actual learning abilities beyond Fillmore's young learners (Skehan 1988). Besides, consciousness of learning is also important with both these researchers. Naiman et al (1978) include 'realization of language as a system', (one of their strategies) which, according to them, means referring back to L1. Similarly Rubin's 'guessing/inferencing' and 'deductive' reasoning assume powerful metacognitive abilities on the part of the learners.

The age factor will be further discussed if and when it appears to offer useful insight.

(b) Personality

Personality is often expressed in a number of personal traits, such as extroversion, high self-esteem, tolerance of ambiguity and risk-taking (eg Gillete 1987). While extroversion has been viewed as a prominent personal trait of good learners, Reiss (1985) found that the successful learner is not necessarily uninhibited. High self-esteem, too is reportedly linked with L2 success, especially in language production (see for example Brown 1980). According to Gillete, learners with high global self-esteem often call language study 'easy' and seem to benefit from situational as well as task-esteem. Tolerance of ambiguity, another frequent characteristic of successful language learner is the open minded and confident approach. It is typical of learners who are relatively accepting events and facts contradicting their own views (Brown 1980). Risk-taking or the 'willingness to appear foolish as long as reasonable communication results' (Rubin 1975:47) is often discussed in this field. The advantage of risk-taking

is not only increased oral practice but as Seliger (1983) would call 'a high input generator' (p. 253)'.

(c) Cognitive style

Cognitive style is a term used to refer to the manner in which people perceive, conceptualise, organise and recall information. Each person is considered to have a more or less consistent mode of cognitive function (Ellis 1986). The various dimensions of cognitive style that have been identified are usually presented as polar opposites such as field dependence/independence (FD/FI). There are a number of hypotheses regarding the role of FD/FI in LL. One such suggestion is that FD will prove successful in naturalistic learning while FI will lead greater success in classroom learning. The empirical research into the effect of cognitive style has not addressed this hypothesis directly. Reiss (1985) reports on the active thinking during class periods. A good language learner, according to her, answers questions mentally whether called upon or not and thereby becomes what she terms 'a silent speaker'. This inner activity may well explain why successful learners do not necessarily have to be extroverts. The efficient organisation of linguistic knowledge is an additional cognitive style observed in learners who frequently use cognates to link new material to old. Finally, high awareness of the learning process itself is a cognitive variable. When Reiss (1981) compared strategies employed by good and poor learners, she found striking differences in the terms students used to describe their own behaviour. While poor students were vague in their statements, good students analysed their strategies in precise and detailed terms.

(d) Motivation and Attitude

These factors have been investigated more thoroughly in the SLA research. The study of motivation became a distinguished research topic after Gardner and Lambert (1972) published a comprehensive summary of the results of a more than ten-year long

research programme in which they describe motivation as the learner's 'overall goal' and attitude as 'the persistence shown by the learner in striving for a goal'. On the basis of this they conceptualised integrative motivation which is associated with components such as

> 'interest in foreign languages', 'desire to learn the target language', 'attitudes toward learning the target language', 'attitude toward the learning situation', 'desire to interact with the target language community', and 'attitude toward the target language community'
>
> (Gardner 1982 quoted in Dornyei 1990:46)

This is distinguishable from the instrumental motivation where the learner's interest in learning the FL is associated with the pragmatic, utilitarian benefits of language proficiency, such as better job or higher salary.

This integrative-instrumental duality has become widely accepted and many studies confirmed the Gardner theory (Gardner 1982, 1985,1988) eg Svanes (1987). Other developments have also been made; more recently (Krashen 1988) and the integrative/ instrumental dichotomy has been viewed rather as a continuum (eg Gillette 1987). As Rubin and Thompson (1982:6) point out

> Pure pragmatism can be an excellent motivation for SL achievement [...]some people are remarkable successful in mastering a language without feeling powerfully drawn to the country or the people who speak it.
>
> (quoted in Gillette 1987:271)

The SL learners attitude towards the learning of English at the collegiate level is no doubt important and so is their motivation. And since these two variables are important factors which help to determine the level of proficiency achieved by different learners, they are, therefore, important where the use of strategies are concerned. To explain these factors the Gardner-Lambert model will be followed in the present study (see 7.2.2c)

(e) Learning Style

A learning style is often confused with learning strategy. From the theoretical point perspective, a learning style is a predisposition on the part of some students to adopt a particular learning manner regardless of the specific demands of the learning task. Thus for Schmeck (1983:233)

> [....] a style is simply a strategy that is used with some cross-situational consistency.

Willing, on the other hand, relates the concept of learning style to that of cognitive style, adopting the main theoretical construct found in the cognitive style definition that of FD/FI. Therefore, to Willing

> Learning style is, like cognitive, a notion of interest, a pervasive set of characteristics which group people into types, or place an individual at a particular point along a descriptive scale.
>
> (1988:52)

Willing draws on Kolb's inventory (1976) linking Kolb's four dimensions, viz abstract conceptualization's, concrete experience reflective observation and active experimentation, to the FD/FI distinction and a personality dimension of activity and passivity in learning. The possibility of combining these dimensions with varying degrees of emphasis leads to the development of individual learning styles, which are individual ways of making decisions and processing information (Kohonen 1990).

Kolb (1984) points out that learning styles emerge gradually as a result of individual choices

> the way we process the possibilities will determine the range of choices we see, and the choices will determine the events we live through. These events will, in turn influence our future choices. Thus individuals in a sense 'program' themselves by their choices and their respective consequences.
>
> (Kohonen 1990:25)

He combines his polar ends, viz prehension and transformation, into four basic learning styles. These are divergent, assimilative, convergent and accomodative (Kolb 1984 , Kohonen 1990)

In this study a learning strategy has been defined as a conscious effort on the part of the learner to solve learning problems. My own position on the issue of learning style is the same as that of Kohonen (1990) and Willing (1988) in that a learning style will mean a set of characteristics or strategies that group learners into types and which emerge gradually as a result of individual choices and which will indicate both consistency and variability in the way learners approach their learning. In fact Haastrup & Phillipson (1983) talk of 'strategy styles' (p. 152) when discussing a general pattern of CS use among their subjects.

2.9 Summary

The aim behind this chapter has been to rehearse the terms in which a strategy is usually described. Here I discussed at length strategies in learning and communication, bringing out the differences and similarities that exist between the two, at the same time drawing parallels between them, especially CS in production and reception, ie reading, which is the main concern of this study.

From the discussion as presented in this chapter and in the framework of the study reading strategies can be placed as follows:

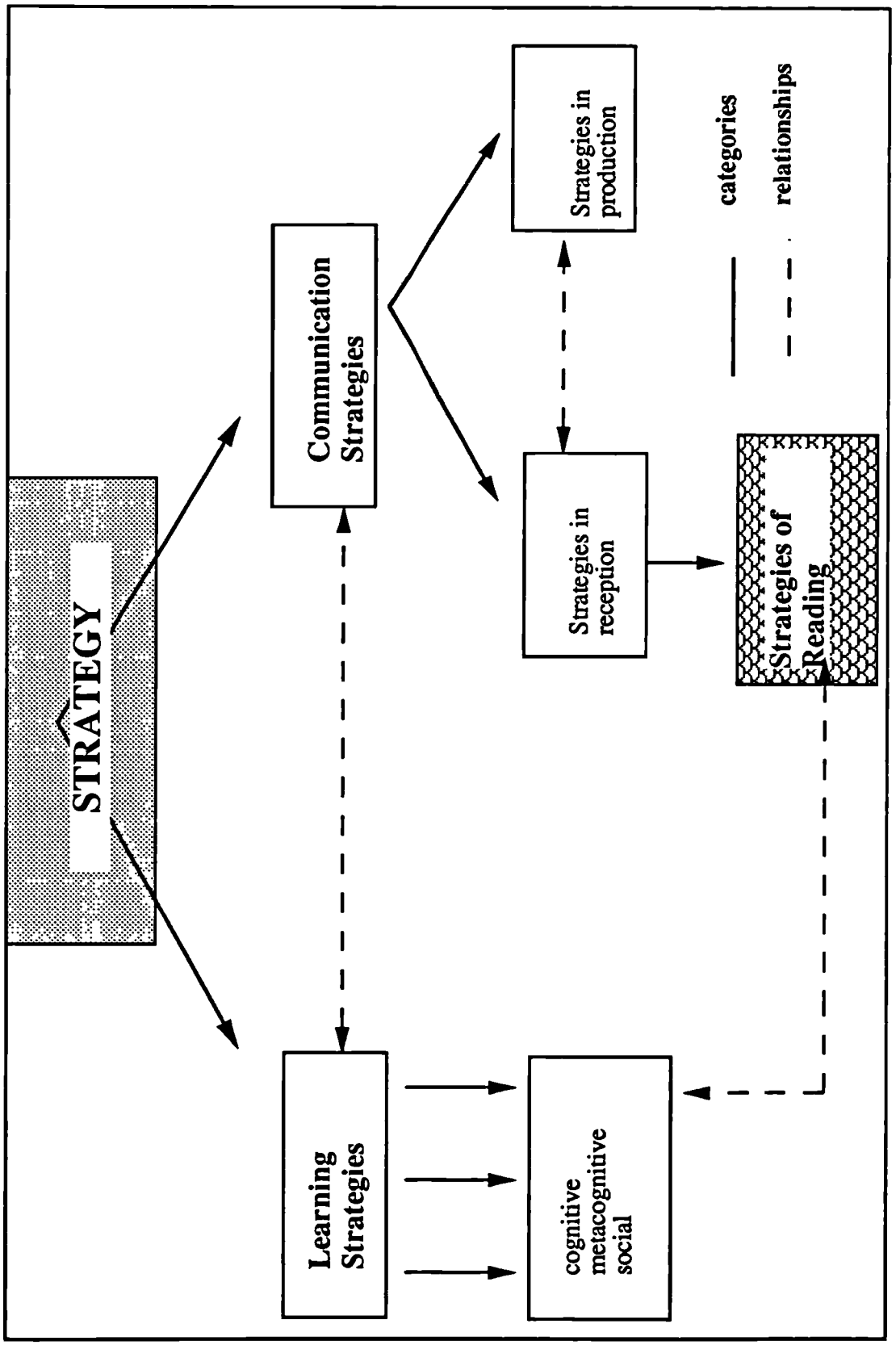


Figure 2.D The place of RS in the study.

CHAPTER THREE

Reading: Models And Strategies

3.1 Introduction

In chapter two I gave a general presentation of strategies - their definition, identification and types. Chapter two also provided some insight into learner variables, particularly those that are influential to strategy use. It is against this general background presented in the previous chapter that the present chapter and the following chapter on reading strategies are set. Chapter three will focus on theoretical perspectives regarding RS and chapter four will try to look into the reading strategy research.

The discussions on strategy types especially on CS in reception are vital for the present discussion on RS, in that they provide the theoretical impetus required for such a discussion. Traditionally speaking, RS are a sub-set of the reception group of strategies. The three criteria introduced and discussed in the previous chapter, viz consciousness, problematicity and goal- relatedness apply to RS as well.

3.2 Reading strategies

The current explosion of research in SL reading has begun to focus, among other things, on RS. In the same way that an investigation of speakers' CS reveals the ways in which speakers manage oral communication, comprehension, input and thus ultimately acquisition (Faerch & Kasper 1983a, Wenden & Rubin 1987), RS are of interest for what they reveal about the way readers manage their interaction with written text, and how these strategies are related to reading comprehension.

Theorists in psycholinguistics (Miller 1963, Clark 1975) and in reading (Goodman 1970, Smith 1973) have suggested that reading is an active process in which the reader

makes efficient use of strategies to understand printed information. A RS can, therefore, be defined on the basis of the discussion in the previous chapter and after Olshavsky (1976-77) as **a conscious procedure carried out in order to solve a problem while tackling a text.**

This kind of definition distinguishes 'strategy' from 'skill', (a word often confused with 'strategy' in reading literature) in that a skill is an acquired ability which has been automatized and operates largely subconsciously. A fluent reader may posses the skill of rapid, automatic word recognition but may resort to a strategy (eg phonetic decoding) when faced with an unfamiliar word.

Similarity drawn by Clark (1975) between strategy research on problem-solving and reading research lead credibility to an application of the Newell & Simon (1972) theory. The theory states that behaviour is a function of an interaction between an organism with certain constraints and abilities and the task environment in which it seeks its goal. To achieve the goal, the organism selects and implements strategies. The success or failure of the goal-oriented effort is determined by the appropriateness of the strategy. Clark views reading as a problem-solving process whereby the reader applies one or more multiple strategies to relate the author's message to information he has in memory. But in order to understand or investigate RS it is necessary to *look beyond behaviour to process*..(Goodman 1988:12). My discussion of RS will, therefore, be incorporated within my discussion of the reading process and reading models.

3.3 Reading as a process

From earlier views of SL reading as a rather passive linguistic decoding process, to more contemporary views of SL reading as an active, predictive process, the field today is strongly influenced by top-down processing perspectives. However, lest the top-down view of SL reading be seen as a substitute for the bottom-up, decoding view,

rather than its complement, several researchers have felt the need to emphasise that effective SL reading requires both top-down and bottom-up strategies operating interactively (Rumelhart 1977, Widdowson 1979).

In this chapter, through my discussion of RS, I will argue for an interactive process to reading for the university students of Yemen. This is because this thesis is vitally concerned with approaches that can improve the reading abilities of these students, through identifying the types of strategies they employ to comprehend an author's message. Some approaches to reading hold much more promise for our understanding of the complex nature of reading than others, especially as it occurs in a S/FL classroom and culture.

In the reading field today two main views prevail - *the decoding* and *the interpretative*. The decoding view is exemplified by bottom-up processing models (eg Gough 1972). The interpretative view can be further categorised to include top-down processing models (eg Goodman 1967) on the one hand, and interactive models (eg Rumelhart 1977, Widdowson 1979) on the other.

I will discuss these different models, viz the bottom-up, the top-down and the interactive models, and since my study is learner-centred, or rather reader-centred, these models will be seen from the reader's point of view- his/her dealing with the text and his approach in employing the strategies each model demands. These three approaches to reading will provide the three main divisions to the chapter, preceded by a discussion of what constitutes a reading text. The chapter is thus concerned with discussing what readers DO BRING to the reading task in order to make sense of the text, as well as what they NEED TO BRING to infer what is called the illocutionary and the propositional developments in a text (Widdowson 1979).

3.4 Text Comprehension

Reading is generally described as a receptive phase of written comprehension. In written language a message has been encoded by the writer in graphic symbols spatially distributed on the page. The reader does not merely pass his eyes over written language and receive and record a stream of visual, perceptual images. He must actively bring to bear his knowledge of language, his past experiences, and his attainments, on the processing of language information encoded in the form of graphic symbols in order to decode the written language. Reading must, therefore, be regarded as an interaction between the reader and the written language through which the reader attempts to reconstruct a message from the writer.

This is a view of reading as a total process and to understand the complexity of such a process we have to consider the elements that make up the reading text. These elements are referred to as systemic and schematic in the reading field today.

3.5 The systemic and the schematic knowledge in reading

3.5.1 Systemic knowledge

In reading a text we extract two levels of meaning - the systemic (consisting of structural and lexical elements) and the schematic (consisting of prior knowledge and socio-cultural elements). For lexical or grammatical meanings, readers may turn to a dictionary or a grammar textbook. It is the schematic meaning that is the most difficult for a SL reader to penetrate.

A knowledge of language will enable us to decipher strings of symbols as sentences and it is this knowledge, more commonly referred to as linguistic competence, that underlies the decoding view of comprehension. But this knowledge will not alone enable us to understand language in use, for this is always a matter of realising the particular meanings of signs in association with the context of utterance. The sign in the

utterance, according to Widdowson (1990) does not function as a symbol but as an index

> [..] it indicates where we must look in the world we know or can perceive in order to discover meaning
>
> (Widdowson 1990:102)

Widdowson is suggesting that there is a contextual level within the knowledge of language itself, *'a level of preparedness for use'*, and it is at this level that schematic knowledge functions.

3.5.2 Schematic knowledge

The role of background knowledge has been formalised as schema theory (Bartlett 1932, Rumelhart 1977, among others). It has as one of its fundamental tenets that text (spoken or written) does not by itself carry meaning. Rather, according to the schema theory a text only provides directions for readers as to how they should retrieve or construct meaning from their own previously acquired knowledge. This previously acquired knowledge structures are called schemata.

The notion of schema has been discussed by many scholars (Rumelhart 1977, Anderson & Pearson 1988, Carrell & Eisterhold 1988). According to schema theory comprehending a text is an interactive process between the reader's background knowledge and the text. Efficient comprehension requires the ability to relate the textual material to one's knowledge. The process of interpretation is guided by the principle that every input is mapped against some existing schema and that all aspects of that schema be compatible with the input information

> Whether we are aware of it or not, it is this interaction of new information with old knowledge that we mean when we use the term comprehension. To say that one has comprehended a text is to say one has found a 'mental home' for the information in the text.
>
> (Anderson & Pearson 1988:37)

There is a simultaneity of top-down and bottom-up processing. I will return to this aspect of schema processing in 3.8.4. after I have discussed the three models.

3.6 The three models

3.6.1 The decoding model

During the early seventies there was a strong tendency in early cognitive theorising to depict information processing as a series of discrete stages (Clark & Clark 1977) with each stage transforming the input and then passing the recoded information on to the next higher stage for additional transformation and recoding. Because the sequence of processing proceeds the incoming data to higher-level encodings, these descriptions of the reading process are called data-driven or bottom-up models. It is not surprising that, since these models were so influential in the early development of information processing theorising, they were the first to be applied to reading not only in L1 but also in S/FL situations.

This approach is the result of the strong influence of the audiolingual method which dictated the primacy of listening over reading and of speaking over writing, and it is also due to the importance assigned to phoneme-grapheme relationships by structuralists such as Fries (1963) and Lado (1964).

In such a model of reading the reader assumes a rather passive role. He views reading as a decoding process of reconstructing the author's intended meaning via the recognition of the printed letters and words, and building up a meaning for the text from the smallest textual units at the 'bottom' (letters and words) to larger and larger units at the top (phrases, clauses, intersentential linkages). Hence, reading problems in such a reading approach are viewed as being essentially decoding problems, deriving meaning from print (Rivers 1964, 1968).

It is perhaps clear how the word *'decoding'* is being used here. It is referred to what Carrell (1988) calls' an overreliance on text-based' or bottom-up processing. It involves decoding of individual words and their lexical meanings, and decoding the syntactic structures of each sentence and their grammatical-functional meanings. According to Fillmore (1981) the text-based processing of the text involves decoding the individual words and their lexical meanings, and decoding the syntactic structures of each sentence and their grammatical-functional meaning as subjects, direct objects etc. Fillmore calls this E-0 level processing (where E-1 and E-2 are text-based and knowledge-based processing and E-3 is knowledge-based processing only). In this sense it is different from the way it has been used by Smith (1973). To Smith, who describes decoding as 'the great fallacy', it means merely

> transforming or reconverting written symbols into spoken language'
>
> (1973:70)

Smith's assumption is based on that of the early proponents of the model (eg Bloomfield 1942, Gibson 1970). Gibson (1970:11) has, for example, said that

> The heart of the matter (reading skill) is surely the process of decoding the written symbol to speech.

I am using the term 'decoding' in the way it has been used by Goodman (1982). Whereas others (like Smith) typically reserve the term 'decoding' to describe what happens when a reader translates a grapheme input into a phoneme input, Goodman uses it to describe how either a graphemic input or a phonemic input gets translated into a meaning code. Goodman uses the term 're-coding' to describe the process of translating graphemes into phonemes. Thus decoding can be either direct (grapheme to phoneme) or mediated (grapheme to phoneme to meaning), or indirect (grapheme to meaning).

In this decoding model there is some recognition of background knowledge, and in particular the role of sociocultural meaning. However, despite the acknowledged importance of the role of background knowledge (Fries 1963) and in particular culture-specific knowledge (now 'schemata'), these concepts play no real role in reading instruction where such an approach is adopted. In other words, systemic and schematic knowledge are kept apart.

The only strategy that the reader has to rely on is that of decoding, be it of small units, such as letters and words, or larger units like phrases and clauses. By employing these decoding strategies the reader aims at deriving meanings from print. According to Gough (1972:354), in this model the reader is not supposed to be a guesser

> From the outside, he appears to go from print to meaning as if by magic. But I have contended that this is an illusion that he really plods through the sentence, letter by letter, word by word.

The reader, in other words, is simply a decoder who knows the rules that relate one set of abstract entities to another and applies them.

3.6.1.1 Limitations of the decoding model

The decoding model is inadequate for any SL class for a number of reasons. According to Smith (1973), underlying the decoding hypothesis is a gross oversimplification that appears to assume that spoken language is comprehended directly and instanteously, therefore, the conversion of written language into speech is sufficient to ensure its immediate understanding. As Goodman (1971) points out, spoken language is itself a code that requires to be broken if meaning is to be apprehended. Written language is not speech written down: writing is a visual form of language, and speech is an acoustic form of it. Extracting the meaning of an utterance - getting from surface structure to deep structure- involves complex syntactic and semantic decisions, the uses of the knowledge and of the world.

There is substantial experimental evidence (Smith 1973) that meaning in the form of semantic and syntactic constraints is employed by readers to minimise the amount of visual information required to identify words occurring in meaningful and predictable sequences. The reader who concentrates on identifying every word correctly will, unless he is already very familiar with the material he is reading, be unable to read for meaning. It is only by reading for meaning first that there is any possibility of reading individual words correctly. There is not sufficient information in the spelling of words to read them before their meaning is comprehended. In a sentence like the following taken from Smith (1973:77)

"We should read the minute print on the permit"

it is not the case that a fixed amount of visual information is required to identify words like *'read', 'permit'* and *'minute';* the amount of visual information required depends on the uncertainty of the reader, that is, the amount of non-visual information that he can contribute. Only the meaning of the entire sequence will tell us the syntactic role of the individual words. All the three words *'permit', 'read' and 'minute'* can be pronounced differently depending on their meanings and functions in the context.

Another short coming of the decoding model is lack of feedback (Stanovich 1980). No mechanism is provided to allow for processing stages which occur later in the system to influence processing which occur earlier in the system. Because of the lack of feedback loops in the model, it is difficult to account for sentence-context effects and the role of prior knowledge of text topic as facilitating variables in word recognition and comprehension.

Eskey (1988) finds the model inadequate as a model of the reading process because it underestimates the contribution of the reader; it fails to recognise that students utilise their expectations about the text based on their knowledge of language and how it works.

No doubt rapid and accurate decoding has a major role to play in the reading process but it is not adequate in order to achieve success in SL reading, especially at higher levels of education. In a nutshell then,

> Reading is not a passive process, in which a reader takes something out of the text without any effort, or merely recognises what is in the text. Nor does it appear to be a process in which he first recognises what is on the page and then interprets it, a process in which a process of decoding precedes a stage of [ ] involvement with meaning... Reading is instead an active process, in which the reader must make an active contribution by drawing upon and using concurrently various abilities that he has acquired.
>
> (Wardhaugh 1969 quoted in Eskey 1979 :71)

But to apply this insight we must let go of our preoccupation with letters and words and see language a unity.

3.6.2 The psycholinguistic model and its limitations

3.6.2.1 The psycholinguistic model

Like the decoding school, psycholinguists Goodman (1967), Smith (1971) and Kolers (1968) also share the belief that for substantial improvements to be made in either classroom procedure or pedagogical materials, a clear understanding is necessary of what it is that the successful reader does in order to understand written language. However, their approach is different.

Goodman (1988) describes reading a psycholinguistic process - in that it starts with a linguistic surface representation encoded by the writer and ends with meaning which the reader constructs.

> The writer encodes thought as language and the reader decodes language to thought
>
> (Goodman 1988:12)

There is thus an essential interaction between language and thought in reading. However, Goodman takes exception to the common-sense notion that a reader proceeds

by decoding a series of verbal units sequence and ideally in perfect detail. This, he maintains, is much too simple a model for what is, in fact, a complex performance involving many different kinds of skills

> a cyclical process of sampling, predicting, testing and confirming.

Goodman's typical reader, according to Gunderson (1970:117) responds to

> [..] graphic cues, guided by constraints set up through prior choices, his language knowledge, his cognitive styles, and strategies he has learned (in forming) a perceptual image.

The image, *is partly what he sees and partly what he expected to see, and on this basis, he makes a guess or tentative choice* (ibid.) as to what is reading.

Goodman's argument is that the good reader takes advantage of the redundancy inherent in language which enables the reader to reconstruct the whole although he extracts only part of the graphic material. Once such a reconstruction has taken place, it is necessary to test its accuracy against previous information.

> The reader does not use all the information available to him. Reading is a process in which the reader picks and chooses from available information only enough to select and predict a language structure which is decodable. It is not in any sense a precise perceptual process.
>
> (1973a:164)

Thus in this model, the reader need not use all of the textual cues - a view in direct contrast to the decoding model in which reading entails processing each and every word (Gough 1972). The better the reader is able to make predictions, the less confirming via the text is necessary. To accomplish this efficiency readers have to maintain constant focus on constructing the meaning through the process, always seeking the most direct path to meaning, always using strategies for reducing uncertainty, always being selective about the use of the cues available and drawing deeply on their conceptual and linguistic competence.

Smith (1971) has, in fact, defined the fluent reader as a person who can make optimal use of all the redundancy in a piece of text.

Kolers (1968) notes that

> the skilled reader can work with vestige of an array, with only parts of words and phrases from the page, which he uses to build the meaning he is constructing in his own mind
>
> (1968 quoted in Eskey 1979:69)

One very immediate and clear implication of such a model is that any reader will have a large number of potential points at which uncertainty may rise and he will therefore have to resort to guessing; hence Goodman's use of the metaphor 'a psycholinguistic guessing game'. The argument is that all readers will read material in accordance with such a model and consequently will, at certain points, guess wrong. The effects of such a wrong guess can, of course, vary from inconsequential to quite serious. One of the key differences between proficient readers and poor readers, according to Coady (1979) is that proficient readers will recover quickly from such wrong guesses or miscues (as Goodman calls them) and their overall performance will be little hampered by them. The poor readers, on the other hand, will not recover in such a successful manner, and will instead fall into a vicious cycle of wrong previous information leading to wrong later predictions.

Smith (1985:82) describes prediction as *the prior elimination of unlikely alternatives* . It is not reckless guessing, he maintains, nor is it a matter of taking chance by betting on the most likely outcome. Prediction, to Smith, is asking questions and comprehension is getting these questions answered.

The general view, therefore, espoused by Goodman, Smith and Kolers, is that reading is primarily concept-driven. This view is also referred to as a top-down approach to reading - an approach that starts with hypotheses and then attempts to verify them by processing the stimulus (whereas bottom-up analyses start by processing the stimulus).

3.6.2.2 Limitations of the psycholinguistic model

As Eskey (1988) rightly observes anyone concerned with ESL reading cannot help but be struck by the dramatic improvements in ESL reading theory and practice during the past ten years or so - the major source being the understanding and acceptance of these psycholinguistic models as presented by Goodman and Smith. This 'top-down revolution' Eskey (ibid) has resulted in an understanding of what good and not so good readers do. But aren't Goodman and his followers, after all, describing fluent readers in L1? The question to ask is, therefore, whether such a model can be recommended for ESL reading situations as well?

In my above discussion I have tried to stress the role of the reader in such a model in keeping with my aim of the autonomous reader. He is certainly active; but that is again not adequate in the sense that to be active the reader has to conform to the assumptions of the model.

> He must actively bring to bear his knowledge of language, his past experience, his conceptual attainments on the processing of language information encoded in the form of graphic symbols in order to decode the written language.
>
> (Goodman 1968:15)

SL readers do not begin reading English with the same English language knowledge available to English-speaking children and this distinction strongly separates L1 and L2 students.

The model assumes that a large vocabulary and the basic syntactic structures are already available to the reader. Such a demand cannot be easily met by most ESL readers. Both Eskey (1986) and Clarke (1979) have characterised the linguistic limitations as a 'language ceiling' which ESL students must surpass if they are to develop fluent reading abilities.

Psycholinguistic models tend to emphasise such higher-level skills as the prediction of meaning of context clues of certain kinds of background knowledge at the expense of such lower-level skills as the rapid and accurate identification of lexical and grammatical forms. That is, in making the perfectly valid point that fluent reading is primarily a cognitive process, they tend to underestimate the perceptual decoding dimension of that process. The model is an accurate model of the skilful, fluent reader, for whom perception and decoding have become automatic, but for less proficient, developing readers this model does not provide a true picture of the problems such readers must surmount.

Although Goodman's model gives an honest and largely valid description of the complex reading process as a whole, it begs the crucial question of how a skilful reader can draw on so many different kinds of skills at one and why some readers are so much better than others at guessing right. In the 'guessing game' the reader uses the printed word for little more than hints as to whether he is thinking the right thoughts or not.

> Good reading must be something more systematic than guessing.
>
> (Eskey 1979:69)

Also such models have been questioned for the vagueness in their conceptualization's because they require implausible assumptions about the relative speed of the process involved. This argument is reinforced by recent research indicating that fluent readers do not use conscious expectancies to facilitate word-recognition. For example, many

studies (eg Eskey 1988, Stanovich 1980) suggest that fluent readers are no more likely than poor ones to rely on orthographic or sentence-context effects for the simple identification of words. Reading rate, according to Stanovich (1980:44)

> [..] is more dependent on the speed with which a reader can recognise words and construct a representation than to use predictions.

Frequent use of top-down strategies at word level suggests a simple failure to decode properly. To properly achieve both fluency and accuracy in reading, developing readers must be encouraged to work at perfecting both their bottom-up recognition skills and their top-down interpretation strategies

> Good reading - that is fluent and accurate reading - can result only from constant interaction between the processes.
>
> (Eskey 1988:95)

In summary then the psycholinguistic models, relying so much on top-down strategies, have serious deficiencies as an explanation of fluent reading. Their account of individual differences in reading is also inadequate.

3.6.3 The interactive models of reading and reading as an interactive process

In this section I first want to make a distinction between the concepts 'interactive process' and 'interactive model'. Because of the way the word 'interactive' is proliferating in ESL reading literature, it may cause some confusion if no such distinction is made.

Interactive may mean 'focus on the relation of the reader to the text' as seen by (Widdowson 1979) or it may mean 'focus on the processing among various component skills and stages' as is understood from the interactive models of reading (eg Stanovich

1980) or it may mean 'focus on features of the text itself' as is described by Grabe (1988).

Widdowson (1979) has described reading as an interactive process. In this light reading is seen as the process of combining textual information with the information a reader brings to a text. Thus reading is not viewed as simply as a matter of extracting information from the text. Rather, it is a process which activates a range of knowledge in the reader's mind that he uses, and that, in turn, may be refined and extended by the new information supplied by the text. Reading is viewed as a dialogue, a communication between the reader and the text. And it is this perspective that will be adhered to in this study.

Such a perspective on reading has evolved out of the development of the schema-theory (Rumelhart 1980, 1984 Adams & Collins 1985, Anderson & Pearson 1988), and out of the reading research of Goodman (1970, 1976) and Smith (1982).

Interactive models of reading, on the other hand, as proposed by Rumelhart (1977), Stanovich (1980) and others, argue that lower-level and higher-level processes work together interactively as parts of the reading process. According to Grabe (1988) this view of reading should not be considered as an alternative version of 'reading as an interactive process'.

> The issue is not the relation of the reader to the text but the processing relations among various component skills in reading.
>
> (Grabe 1988:58)

3.6.3.1 Interactive models of reading

There is no single interactive model. Rather, interactive models include any model that minimally tries to account for more than serial processing and that does so assuming

that any parallel or array processing will interact. In their simplest forms such models incorporate both top-down and bottom-up strategies. They claim to incorporate within themselves background knowledge, expectations, context and so on. At the same time, they also claim to incorporate notions of rapid and accurate feature recognition for letters and words, spreading activation of lexical forms, and the concept of automaticity in processing such forms. Models of this type are often referred to as Interactive Parallel Processing models because the processing is distributed over a range of parallel systems simultaneously.

A number of such models have been proposed. Samuels and Kamil (1988), for example, give an outline of five interactive models. Below I provide a sketch of these models, with the intention of giving an insight as to how these models generally interact and at the same time contrast them to interaction as a process.

The Automatic-processing Model (LeBarge and Samuel, 1974) was initially a bottom-up processing model. In 1977 feedback loops were added that allowed the reader to move back and forth between higher and lower levels of processing as needed. The theory assumes that efficient low-level recognition processes can free up the capacity for higher-level processes. However, it is not clear what type of processing occurs at the word recognition level and what happens when word recognition is slow and efficient.

The Interactive-compensatory Model (Stanovich 1980), on the other hand, integrates concepts from a variety of sources but is mainly based on many issues of word recognition processes. This approach explains many complex results of research on good and poor readers in a comprehensive way. The basic premise is that reading involves an array of processes. Readers who are weak in one will rely on other processes to compensate for the weaker process. Good readers will have a large

repertoire of compensating strategies to draw upon than will poorer readers. Stanovich states that

> A compensatory-interactive model of processing hypothesizes that a pattern is synthesized based on information provided from all knowledge sources and that a process at any level can compensate for deficiencies at ant other level
>
> (p.252)

Stanovich has also incorporated the concept of spreading activation by means of which lexical forms become automatically available in reading. This concept, growing out of the logogen theory (Morton 1969, 1979, cf. 2.7.3.), also allows us to consider schematic selections as a more manageable process. However, the model, despite its claim to be 'unique', is only technically interactive - in the sense that any stage, regardless of its position in the system, may communicate with any other stage, and it is compensatory, only because any reader may rely on better developed knowledge sources when particular, and usually more commonly used, knowledge sources are temporarily weak.

The Interactive-activation Model (Rumelhart & McClelland 1982) is similarly based primarily on word recognition research. It follows, like Stanovich's, largely from the logogen model of mental activation and information retrieval. The process of activation as seen by the model is essentially one in which individual features, letters, clusters, context syntax, semantics, topic of discourse, background knowledge all excite groups of lexical candidates for meaning or comprehension selection. As excitation increases from more sources, the candidates not excited are blocked, or inhibited, leaving only one or two words to pass a consciousness threshold. This process happens at a rate more rapid than the time needed for conscious guessing. Generally speaking the automaticity of this processing allows us to concentrate on comprehension rather than an active selection or production of words.

What the ***Bilateral-cooperative Model*** (Taylor & Taylor 1983) does is that it combines features of the Stanovich and Rumelhart & Mclelland models and sets up parallel processing strategies at a number of levels of text information. The parallel processing operates both rapid and slow mechanisms for processing according to the needs of the reader and the difficulties imposed by either the task or the text. Taylor & Taylor define the model as postulating two tracks that

> complement one another at each of several stages in understanding text. The process of one track are fast and global and attempt to find similarities between their inputs and familiar patterns. The processes of the other are slow and analytic and sort their inputs into elements in an attempt to find differences .
>
> (p. 266)

The Verbal-efficiency Model (Perfetti 1985, 1986) argues that reading should be defined more narrowly than it is in many other models, interactive or otherwise. For Perfetti, reading comprehension should not be equated with thinking and its concomitant, general inferential/problem-solving strategies, but more narrowly with processes specific to reading. He therefore proposes that processes of lexical access, proposition integration and the text model building form the core of his model, with lexical access receiving primary emphasis. Using these three processing skills specific to reading, Perfetti is able to explain a wide range of variation in reading ability.

3.6.3.2 The inadequacy of these models for the present study

Each of the five models reviewed above takes a somewhat different perspective, and all have gaps. However inadequate any of these models might be it is but fair to admit that

> they represent improvements on top-down, or concept-driven, models, improvements widely recognised in the reading and psychology literature.
>
> (Grabe 1988:63)

But as far as this study goes none of these models is directed towards reading as communication. They emphasise the idea of schema as a cognitive template which facilitates and speeds up comprehension by means of matching information. Also, the

concept of 'automatic spreading activation', the basic tenet of most of these models, does not rely on attentional capacity - a type of effect not controlled by the reader. It, therefore, renders the model not valid for the present work on strategies.

3.6.3.3 Reading as an interactive process (Widdowson 1979)

Widdowson's notion of an interactive model is more reader-oriented than the types of models presented by Rumelhart and others, and at the same time it retains the importance of the textual cues. The text guides the reader towards an interactive participation. Reading is seen as

> [..] operating at two different levels of mental activity, the first dealing with the immediate apprehension of information and the second with the discrimination of this information into patterns of conceptual significance.
>
> (1979:173)

Widdowson considers reading in the context of a more general interpretative activity - a process which underlies all communicative activity. He suggests that because the encoding process (that is the writer's composition of message) is imprecise and approximate, there is no possibility that the reader will get complete meaning from the text. By encoding the writer is only devising a set of directions. These directions indicate to the reader where he must look in the conceptual world of his knowledge and experience for the writer's meaning. The encoder then relies on the active participation of the decoder and the decoder is successful in his comprehension to the extent that he understands the directions and is capable of carrying them out. The direction depends, therefore, on the reader's understanding of the textual cues (bottom-up processing) or *apprehension of information* and then his relating it to the conceptual world of his knowledge (top-down strategies).

In this view reading is regarded not as a reaction to the text (as is the general assumption) but rather as an interaction between the writer and the reader mediated

through the text. 'Decoding' as used by Widdowson, is surely different from the way it has been used in the 'decoding models' discussed earlier. To Widdowson's decoder, who is an involved participant in the process,

> [..] reading is an act of participation in a discourse between interlocutors
>
> (p.174)

It seems to follow from this that reading efficiency cannot be measured against the amount of information contained in a text. All interactive models seem to agree on this point. Reading efficiency is a matter of how effective a discourse the reader can create from the text. Whether or not the meanings of the writer and reader coincide is something not easy to judge but they do not have to for communication to take place

> [..] a rough correspondence is all that is necessary.
>
> (p.175)

The reader in such a model then is engaged in an interaction with the writer in which language is used as a clue to correspondence of conceptual worlds. Just as in spoken conversation the interlocutors do not piece their meanings together with careful precision, but rely on what Grice (1975), calls 'the cooperative principle', in a written discourse (which is non-reciprocal) the interaction is encoded within the process itself, by the writer in the encoding of message and the reader in its decoding it. In short the text becomes a covert dialogue between the writer and the supposed reader. Both reader and writer assume the dual role of addresser and addressee in constituting and reconstituting the dialogue

> [...] the reader also assumes the dual role of addresser and addressee, and reconstitutes the dialogue.
>
> (p.177)

Unlike the top-down models, Widdowson's interactive model does not presuppose the primacy of top-down processing skills but rather posits a constant interaction between

bottom-up and top-down processing in reading, each source of information contributing to a comprehensive reconstruction of the meaning in the text. In this view good readers are both good decoders and good interpreters of texts and reading becomes an act of communication between the reader and the text.

3.6.4 Reading and communication

Widdowson's definition and description of reading as communication is in line with Tarone's definition of CS (cf.2.6). In interactional terms Tarone (1983) has defined CS as

> a mutual attempt of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared.

Reading as an act of communication involves the transmission of information not just from one individual world to another but

> [...] from one schematic setting to another. Negotiation is necessary to bring about the required adjustment so that there is an alignment of frames and reference.
>
> (Widdowson 1984b: 91)

The basis for communication, therefore, is negotiation of meaning of the indexical expressions which supply the recipient, as stated earlier, with directions to be worked upon in combination with prior and accumulated background knowledge. In the case of reading (as compared to speaking), communication is non-reciprocal, indirect and covert as Widdowson (1984b) suggests, negotiation only taking place on the reader's own terms (eg interest, purpose, prior knowledge). Reading as communication also assumes that the reader has communicative competence to cope with the

> [..] striving for equilibrium in negotiation of meaning of indexical expressions, ie of text as 'meaning potential' as suggested by Halliday, 1978.
>
> (Cavalcanti1983:49)

3.6.5 Interaction and interpretation in reading

The interactive aspect of reading, it is now clear, is part of Widdowson's model (but not of Rumelhart and his school, which is cognitively based) in so far as comprehending a text becomes an interactive process between the reader's background knowledge and the text. And since I am advancing this text-reader approach to reading it is this background knowledge that needs to be emphasised at this juncture.

As I stated earlier (3.5.2) there is a simultaneity of top-down and bottom-up processing occurring in the event of schemata activation. The data-driven aspect is evolved by the incoming data; the features of the data enter the system through the best fitting, bottom-level schemata. As these bottom-level schemata converge into higher-level more general schemata, these too become activated. Top-down processing, on the other hand, occurs as the system makes general predictions based on higher, general schemata and then searches the input for information to fit into these partially satisfied, higher order schemata. For instance, in Collin & Quillian's (1969), often quoted and discussed example, (Carrell & Eisterhold 1988:77)

'The policeman held up his hand and stopped the car.'

the most likely schemata is that of a traffic cop signalling to a driver of a car to stop. This interpretation of the sentence will, however, change once the policeman were known to be Superman. The policeman's holding up his hand and the car's stopping take on entirely different interpretation when the text is interpreted against the Superman schema. The holding up of the hand is not interpreted as a signal at all as in the 'traffic cop' schema but rather the direct physical mechanism of stopping the car.

In yet another example,

'Mary heard the ice-cream man coming down the street. She remembered her birthday money and rushed to the house,...'

Carrell & Eisterhold (1988) try to link the role of schema and the developing interpretation of a text. Upon reading these lines the reader may interpret them in the following manner. Mary, a little girl, heard the ice-cream man coming and wanted to buy some ice-cream from him. She remembered she had some money given to her for her birthday, and which was presumably in the house. So she hurried into the house to get the money before the ice-cream man arrived. If the reader next encounters the phrase

'... and locked the door',

he is unable to fit the new piece of textual input information into the developing interpretation. He is forced to revise the interpretation in such a way as to make this new information compatible with the previous information. What happens is that as long as the incoming information being processed through bottom-up processing and the conceptual prediction being made through top-down processing are compatible, the reader has a satisfactory interpretation of the text. When he encounters a mismatch between the top-down predictions and the bottom-up information, he is forced to revise the interpretation in such a way as to make the two compatible once again.

What I am trying to illustrate here is the effects of background knowledge, schematic interpretation, and the simultaneity of top-down and bottom-up processing. It seems clear that readers, in their interaction with the text, activate an appropriate schema against which they try to give a text consistent interpretation. To the extent that they are successful, we may say that they have comprehended the text. However, one potential source of reading difficulty may be that the reader has a consistent interpretation for the text, but, as has been pointed out, it may not be the one intended by the author.

If the reader is prepared to play the role that the writer has cast him in, then, according to Widdowson (1984b), he will seek to recover the underlying discourse from the textual clues provided (as the ice-cream man example). In other words, the reader,

recognising the authority of the writer and wanting to allow access to the information given, will adjust his frame of reference to accommodate it. In an act of submission

> he will follow the text like a script.
>
> (Widdowson 1984b:90)

and Mary's locking of the door will be inferred, for example, as a protection against the ice-cream man who might steal her money.

It may also be that the reader may not wish to submit to the writer's control in this way, or he may not be able to accommodate the writer's conceptual scheme into the patterns of his own life space. Instead of adjusting his scheme of things to that of the writer's, he may change the direction of accommodating so that the text is adjusted to fit the patterns of his own significance, and Mary's locking of the door will be inferred differently.

In seeking to understand the role of background knowledge in reading comprehension it is useful to draw a distinction between formal schemata and content schemata.

(a) Formal Schemata

Formal schemata (or 'rhetorical routines' as Widdowson, 1984a, calls them) is the background knowledge about, and expectations of, differences among rhetorical structures, such as difference in genre, differences in the structure of fables, simple stories, scientific texts and so on. Our schema for simple stories, for example, includes that the story should have a setting, a beginning, a development and an ending. Meyer & Freedle (1984) recognise five different types of expository rhetorical organisation (collection, causation, response, comprehension and description). Each of these types are said to represent different abstract schema of ways writers organise and readers understand topics.

Several recent studies have shown the effects of formal, rhetorical schemata in ESL/EFL. Results of a study by Carrell (1984), for instance, showed that when stories violating the story schema are processed by SL readers, both the quantity of recall and the temporal sequences of recall are affected.

(b) Content Schemata

This type of background knowledge or 'frame of reference' Widdowson, (1984a) is about the content area of the text, (Carrell 1988) such as a text about 'birds', 'the economy of Mexico', or 'the history of the Yemen'.

A reader's failure to activate an appropriate content schema during reading results in various degrees of non-comprehension. This may be due to a mismatch between what the writer anticipates the reader to do to extract meaning from the text and what the reader is actually able to do. Another reason, as put forward by Carrell and Eisterhold (1988), is that a content schema is culture-specific and is not part of a reader's cultural background.

Studies by Steffensen et al (1979), Johnson (1981) and Carrell (1981) have shown that the implicit cultural content knowledge presupposed by a text interacts with the reader's own cultural background knowledge of content to make texts whose content is based on one's own culture easier to understand than syntactically and rhetorically equivalent texts based on a less familiar, more distant culture. Johnson (1982), for example, has shown that a text on a familiar topic is better recalled by ESL readers than a similar text on an unfamiliar topic. Hudson (1982), also, reports a study showing an interactive schematic effect in SL reading comprehension.

3.7 The three models of reading and the Yemeni reader

As my discussion so far has shown the 'decoding model' is a language-oriented model which tends to oversimplify interpretation strategies. The view of reading that it represents is not a valid description of what readers can be observed to do. But like most ESL readers in classroom settings, the Yemeni readers do misconceive ESL reading as a primarily bottom-up process. Such misconceptions are caused by an over-emphasize on decoding skills, and on the code, in general, especially in early language and reading instruction. Reading is often done for the teacher's purpose and not the students, and reading comprehension is usually tested by question answering - questions that stress literal text content rather than its integration with related prior knowledge.

The 'psycholinguistic model', in trying to be reader-centred, undermines some high-level decoding skills.

Widdowson's model brings these two aspects (the decoding and the interpretation of texts) together. The text (encoder's message) is as important as the active intervention of the reader. On the basis of these qualities it is used as the ideal model for the study. A number of important implications for ESL reading research follows from an acceptance of this model. Its very nature suggests that higher-level processing abilities play a significant role. It gives some insight how these processes can interact - how such notions as background knowledge, topic of discourse (in the covert dialogue), inferencing and schemata all affect the overall reading model. Such an approach to reading makes the reader aware of the essentially imprecise character of communication through natural language. At present, as stated earlier, it is hypothesized, that Yemeni readers believe that exact meaning can, in principle, be fully recoverable from texts if they are scrutinised in sufficient detail. They are thus discouraged a normal use

of natural language and are thus denied access to their own conceptual world which can only ensure meaningful reading.

On the basis of these arguments the following research questions are formulated:

(a) Do Yemeni readers **really pursue a decoding model?**

(b) Do Yemeni readers **employ strategies** such as **guessing** and **predicting?**

(c) Do Yemeni readers **employ interactive strategies** such as **inferencing** and **use of schemata** while tackling a text?

3.8 Summary

The chapter has tried to discuss RS through the discussion of different reading approaches and models. Starting from the decoding model, where the reader relies mostly on bottom-up strategies such as phonological decoding, and which is the model mostly adhered to in conducting reading instruction in the Yemen, the discussion has moved on to top-down and then to interactive processes. An interactive approach to reading is seen as the most suitable model for this study. It is based on reader-text interaction, which in turn is viewed as an interactive, interpretative and communicative process.

As far as RS are concerned they can be, theoretically speaking, identified depending on which model of reading one is following. Where a decoding model is adopted the main strategies one will be looking for are the decoding strategies. Within the psycholinguistic model two main strategies can be studied extensively, viz guessing and predicting. In the interactive model, where the top-down and bottom-up processes are said to interact, there may be a number of complex strategies employed which call for detailed analysis and which may include inferencing or the use of schemata.

The chapter also set some targets for empirical work. However, before setting to see how these targets can be achieved, some empirical studies on RS need to be considered.

CHAPTER FOUR

Reading Strategy Research

4.1 Introduction

Chapter three concluded with a note that theoretically speaking RS can be identified depending on which model of reading one is adopting. Three different models were considered depending on the reader's role in each. In the decoding model the reader is seen as a rather passive participant who depends on the linguistic input in the text. The psycholinguistic approach demands an active participation on the part of the reader who has to resort to strategies such as guessing. In the interactive approach the reader has to interact with the language and thought of the author. This chapter outlines the major studies that have addressed the question of reading strategies.

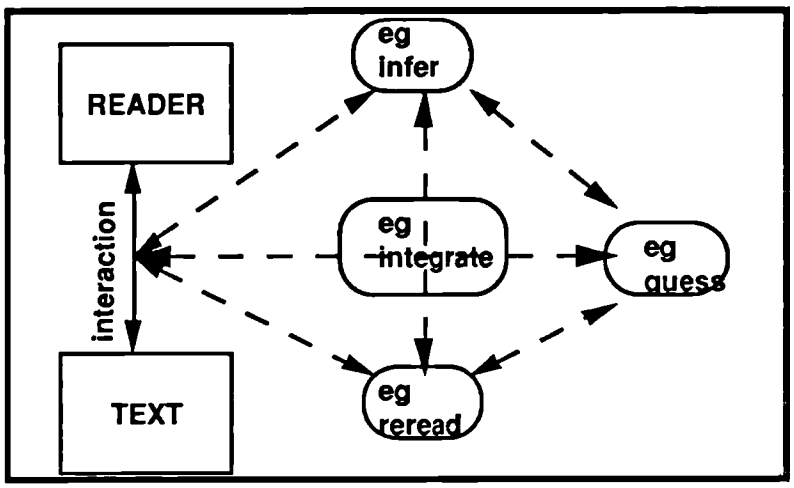
Reading strategies, as perceived in this study, have been described as a conscious effort on the part of the reader to solve problems arising in reader-text interaction. The problem aspect is borrowed from the strategy definition presented in the strategy chapter and the interactive aspect comes from the reading chapter.

When authors create, they project language, their thoughts, and their meanings into producing texts. Their creations are limited by what they know. Because of the obvious differences between the language, thoughts and meanings of an author, and those of the reader, reading can never be an exact process and problems may rise. Because the reader's own language and thought become involved through interaction with the language and thought of the author, readers can never be certain that they have discovered the meaning the author intended. However, to understand what they are reading, readers interpret actively while reading to gain meaning, which is their ultimate goal.

The model of reading at which this study draws its target sees reading as an act of communication - communication which involves both interaction and problem-solving. It also sees reading as an interaction between reader-text and the use of strategies as a means of solving problems arising from this type of interaction (see Figure. 4.A)

Figure 4.A

Reader-text interaction and use of strategies



In solving the major problem confronting him/her the reader uses a number of complex strategies. For example, in order to comprehend a reading text a student might be thinking "*What does the author mean by this? Am I understanding this? Does it make sense?*" Using this kind of comprehension monitoring to identify the areas of difficulty, the student may take notes of words and expressions to be checked later. The teacher would observe the note-taking strategy but would only know about the self-monitoring strategy by asking the students what they are thinking while reading. Effective learners, it is said, know how to use appropriate strategies to reach their learning goals, whereas ineffective learners are less expert in their strategy choice and use. It is such issues that make the identifying of students' current strategies such an important and valid pursuit because it is only through knowing and discovering the current strategies that other strategies can be fostered and, therefore, lead to students becoming more successful readers.

Four major purposes can be achieved through the identification of strategies students are already using for different FL tasks. First, according to Hosenfeld (1979) students develop metacognitive awareness as they describe their thinking process and discover those of their classmates. Second, as students discover their RS with their peers (in group activities, for instance) they discover new strategies and new applications of familiar ones. Third, teachers can assess the strengths and weaknesses in students' current strategy use and use this information to plan strategy instruction. Finally, knowledge of a student's strategy with a task provides a double exposure consisting of the task and what the student does with it. By pooling the strategies of a group of students, a teacher may obtain a many layered perspective of a single task. Strategies of successful learners can provide a basis for remediation of the strategies of the unsuccessful learners.

Let us now consider how far research on RS has addressed these issues.

4.2 Reading strategy research

The issue of identifying RS through empirical research has gained some prominence in the recent times. The studies dealing with the issue can be classified as shown below. However, since this study is basically interested in looking at reading as a problem-solving and interpretative activity, only studies of the last category (d) will be considered in detail, after a brief account of the other categories is provided.

(a) Studies that place reading within a language framework.

These studies explore the process of reading as it relates to the other language processes of listening, speaking and writing (eg Chamot & Kupper 1989). Such studies are not different from the traditional skill-based approaches where reading is seen as one of the four basic language skill and for which a separate section is always devoted. This

approach, though integrated, gives very little information as to what strategies are specific to reading as an independent behaviour.

(b) Studies that view reading as a set of subskills (eg Stanovich 1980).

These studies, reviewed by Stanovich (1980), among others, are based mainly on the assumptions that differences between skilled and unskilled adult readers can be revealed using tasks that tap the speed of perceptual processing at the word level and below. One of the studies, eg Perfetti & Lesgold (1977) relates the ability to rapidly recode print items into a phonological form to reading ability. Another study (eg Mason 1978) builds its hypothesis on phonological processing, automaticity, and speed of word recognition. In a similar study Rozin & Gleitman (1977), state that an inability to notice and cope with phonological aspects of the language may pose a stumbling block to reading acquisition. In yet another study Perfetti, Finger, and Hogaboam (1978) summarize their results saying that the ability of the less skilled reader to use constraining knowledge as well as the skilled reader is re-established. The differences between skilled and less skilled readers in reaction times to words and pseudowords seem to be due to processes of verbal coding, including processes that operate on subword units.

(c) Studies that view reading as miscues (Goodman 1974).

Miscue analysis is based on the analysis of errors made by elementary school children in oral reading. Errors are analysed for their similarity to or difference from the words in the text, and inferences are made about the process that must have been occurring. Such studies show that during their processing readers make use of graphic, syntactic, semantic and discourse information. This technique started by the Goodmans in the early sixties, assumes direct connection between reading aloud and silent reading.

(d) Studies that view reading as interactive or problem-solving.

It is these studies that are of relevance to the present work. The six studies selected for review either view reading as a problem-solving (Olshavsky 1976-77, Hosenfeld 1977, and Block 1986) or as an interactive process (Carrell 1983, Cavalcanti 1983 and Afflerbach 1990). While the first group of these studies deal directly with RS, ie without relating them to elements of background knowledge, the second group does. This distinction between the the two groups will be retained throughout the chapter for the sake of clarity. The studies will first be described and then a general discussion will be presented bringing out their relevance to the present study in terms of the various variables involved.

4.3 Empirical research on RS

Research on RS of native speakers of English has concentrated on describing those strategies which are involved in understanding. Many researchers have compared the performance of 'good' and 'poor' readers (eg Gambrell & Heathington 1981) or older and younger readers (Bauman 1982). Others have studied the strategy use of competent readers (Baker 1979, Johnston & Afflerbach 1983). The results of some studies suggest that good readers are more able to monitor their comprehension than poor readers are, that they are more aware of the strategies they use than are poor readers, and that they use strategies more flexibly. Specifically, good readers adjust their strategies to the type of text they are reading and for the purpose for which they are reading. They distinguish between important information and details as they read and are able to use clues in the text to anticipate and/or relate new information with information already stated (Olson et al 1984). They are able to notice inconsistencies in a text and employ strategies to make these inconsistencies understandable (Baker 1979). Yet other studies (Olshavsky1976-77) suggest that readers differ in their overall approach to the text rather than in the specific strategy they use.

While these studies provide information about certain types of readers, it is difficult to compare results across studies, since the age, the grade level of participants, the task, and the reading material vary from study to study. Even the categories of strategies vary from study to study.

When considering reading in a SL, the number of factors influencing reading ability increases geometrically. Questions of the influence of the readers' L1 as well as their SL proficiency complicate investigation of SL reading and increase the difficulty of comparing the results of the studies. In general, research in the strategy use of SL readers fall into two groups - one argues that reading ability in a SL is largely a matter of proficiency in that language (Clarke 1979, Cziko 1980, Eskey 1988). Language skills, according to these researchers, develop in a linear progression, moving from lower-level letter-and-word level skills to higher level cognitive ones. This is in line with the decoding model of reading. The other group asserts that higher-level strategies developed in L1 can be transferred to a SL and can operate alongside lower processing strategies (Coady 1979, Goodman 1973, Cummins 1980, Hudson 1988). These researchers believe that as language proficiency develops, linguistic cues can be used effectively and that prediction and other cognitive processes will therefore operate more smoothly. This clearly is a psycholinguistic approach.

What has been missing from these discussions is a direct view of the reading process of the ESL reader. Except for studies by Hosenfeld (1977) and Cavalcanti (1983) there has been no direct investigation of the stops and starts made by SL readers and what occasions them.

4.3.1 Investigating RS

This section will discuss three studies that have tried to investigate RS using protocols. Olshavsky's study has been widely acknowledged for its originality in studying RS in

L1. Many similar studies have been attempted in L2 (eg Hosenfeld 1977, 1978, 1979, Block 1986).

Olshavsky's study (1976-77) supports and extends the Goodman & Burke (1972) psycholinguistic approach which is based on problem-solving. It was undertaken to identify the types of strategies readers employ to comprehend an author's message. Because the researcher was looking at reading as a problem-solving activity, the theoretical framework and methodology developed by Newell and Simon (1972) were applied in the study. Strategies were examined in relation to reader proficiency (good, poor), interest (high, low) and the reading material (abstract, concrete)

The subjects (15 boys and 9 girls from a group of 90 tenth grade students) were enroled in three heterogeneous English classes in a high school in a small Midwestern city. Each student was given a short story, the choice of the story depending on the condition set for the subjects. For example, subjects in condition one received a story with an abstract writing style which they rated as of high interest to themselves. Four stories were used in the study (two abstract and two concrete). Strategies were identified by adopting the method of protocol analysis (an issue that will be discussed in the following chapter). Olshavsky hypothesized that

a- readers with high interest will apply strategies more frequently than readers with low interest.

b- good readers will use different strategies than poor readers.

c- good readers will use strategies more frequently than poor readers.

The study identified ten RS (see Table 4.7.1). These strategies provide new information about the reading behaviour. They lend support for a theoretical position that reading is a problem-solving process. It appears that a reader with given abilities and goal of comprehending identifies problems and applies strategies to solve the problems. The results, according to Olshavsky, indicate a tendency for readers to

apply the most strategies when they want to comprehend (are interested), when they can (are proficient readers), and when they need to (are faced with abstract material).

Olshavsky's interpretation of results bear a direct resemblance to both Tarone's concept of CS as well as Faerch and Kasper's (1983b), bringing out the former's criteria for defining CS in the following manner:

Table 4.3.1.1
A comparison of CS and RS

Tarone and CS		Olshavsky and RS
1. a desire to communicate		1. want to comprehend
2. linguistic/ sociolinguistic structure not available		2. faced with abstract material
3. can/cannot		3. avoid/attempt

The strategies identified are of two types: problem-identification strategies and problem-solving strategies, (a method Faerch and Kasper follow in their categorising of CS).

Olshavsky concludes that the importance of studying strategies in reading behaviour is evident from the types of strategies identified. It appears that a reader may achieve his goal of comprehending by first utilising a strategy of identifying problems which prevent him from achieving his goal. In order to solve these problems, the reader adopts his behaviour by applying problem-solving strategies. This emerging model of reading behaviour as problem-solving reveals a parallel pattern between RS with CS.

In an effort to discover the RS of successful and unsuccessful SL readers, **Hosenfeld (1977)** conducted a study in which she compared the RS of 40 students (20 good and 20 poor). Each student was asked to think-aloud while doing certain tasks. Hosenfeld

based her data elicitation procedures on interviews, following several principles such as obtaining as complete a description of students' RS as possible, using an introspective rather than a retrospective description of the RS.

The data analysis aimed at discovering the differences that existed between the two groups. This was on a notational system and subsequently 'reading maps' and 'computer print-outs' were produced. The strategies of the successful readers provided a basis for remediation of the strategies of poor readers in classroom settings. Analysis of the self-report data revealed that certain strategies were more characteristic of good readers than poor readers.

Block's (1986) study "Comprehension Studies of SL Readers" is similar to Olshavsky's in that it provides a detailed description of the RS, but unlike Olshavsky Block is studying ESL college students, especially those 'designated as nonproficient readers'. In addition, the strategies used by these readers are compared with those of NS, also designated as nonproficient readers. Poor readers (6 ESL and 3 NS) were chosen as the subjects of this study because they were the ones at whom college remedial reading programmes were aimed. As Block (p.465) states,

> [ ] little is known about what they actually do as they read, what the strengths and weaknesses of their strategy resources are, and how their reading differs from that of proficient adult readers.

The description encompassed both the strategies these readers used while reading textbook material in English and the product of their reading, ie the amount of information understood and remembered. The material selection procedure adopted by Block is rather complicated and ambiguous. The study claims to be the first to use the think-aloud task to report strategies of ESL readers but also uses multiple-choice questions. Block's fifteen RS are categorised into two levels: general comprehension and local linguistic strategies (see Table 4.7.1).

The study reports a similarity between the time spent by ESL and NS participants in responding aloud to the text, suggesting that all readers were able to perform the think-aloud task. Performance on the recallings followed a pattern similar to that defined by strategy use while performance on the multiple-choice tests did not follow the pattern found in the retellings. Block concludes that strategy use is a stable phenomenon which is not tied to specific language features,

> [...] in this way learning to read in a SL may differ from learning to read in L1
>
> (p. 485).

Block also suggests a similarity or rather a relationship between academic reading and writing strategies

> They remind us (the similarities between the composition processes involved in writing and the reader's construction of text) that reading is a process of construction in which the processor is an active participant. It may be that the ability to connect and to form a cohesive version of text also plays an important part in the ability to write an essay.
>
> (p. 485)

Again a view of reading as an interaction between the reader and the writer emerges.

4.4 Research on RS and schemata

While the earlier section dealt with RS in isolation, in this section I will discuss them within the schema context.

Research by cognitive psychologists into the influences of L1 reading comprehension of schemata (see also chapter 3), that is knowledge structures which the reader brings to the text, provides two important insights into the non-visual information processing problems the SL reader may confront (eg Anderson et al 1977). First, the research provides insight into the effects of extratextual background knowledge on processing. Second, it indicates how during the process of schematic reconciliation, the process of

fitting new input to existing knowledge structures, good reader strategies may cause a breakdown in comprehension.

The implications are that while decoding based theories of reading hold that difficulties in reading can be traced to failures of skill, Anderson et al (1977) think that schemata which the reader brings to the text are far more important than structures and patterns which are in some sense 'in' the text. From the perspective of the schema theory, the principal determinant of the knowledge a person can acquire from reading is the knowledge he possess. The second implication of this theory for SL reading is the indication that the process of attempting to utilise context to establish the meaning of a message which has been encoded in print inherently involves RS which may themselves contribute to the short circuit (any reading which does not end in meaning is a short circuit). For it must be born in mind that reading is a meaning oriented and, in Smith's terms the reader is not moving from words to meaning but rather is moving from meanings to words (Smith 1971). The application of meaning may prevent the reader from responding to linguistic cues. Here, the comprehended meaning of a message is fundamentally dependent upon a reader's knowledge of the world and analyses of context, in addition to his use of the local linguistic characteristics of the message. For the reader according to Hudson (1988:186) the scope context ranges, from basic linguistic constraints to his physical and social milieu, while meaning is seen as including

> the sense, reference, truth value, illocutionary force, prelocutionary effect, and significance of message.

Adult NS research has also shown that the better a reader is able to access background knowledge about either the content area of a text (eg Bransford & Johnson 1972, 1973) or the rhetorical, formal structure of a text (eg Rumelhart 1975) the better he will be able to comprehend, store and recall the text. Much less research has been done to date

investigating the role of schemata in SL reading comprehension. However, some recent studies of ESL/EFL readers demonstrate the effects of background knowledge in ESL/EFL reading comprehension. Most of these studies show that ESL/EFL readers read, understand, and remember better texts that deal with their own familiar culture - ie materials for which they have well-developed background knowledge - than they do with texts that deal with a less familiar or unfamiliar culture, ie materials for which they lack the appropriate schema (Carrell 1981). A different kind of schema study shows the effects of rhetorical, formal schemata on ESL/EFL reading comprehension (Carrell 1981).

4.4.1 Investigating RS within the schematic context in L1/L2

Experimental studies have demonstrated that readers with relatively high prior knowledge for texts performed better on comprehension measures than readers (with equivalent reading abilities) but low prior knowledge of text. In this section three studies will be considered one in L1 (Afflerbach 1990) and two in L2 (Carrell 1983, Cavalcanti 1983). While Afflerbach and Carrell look at specific elements or variables, Cavalcanti's approach is more on the pragmatic level.

Afflerbach's study (1990) was set to examine systematically the influence of prior knowledge on expert readers use of strategies to construct the main idea. Readers were asked to give verbal reports about the strategies they were using to construct the main idea as they read, and these reports were analysed to identify common strategies. Experts from two different fields, viz anthropology and chemistry, read texts from both the familiar and unfamiliar content domain, in order to specify the effects of prior knowledge on their reported strategies.

Based on the assumption of reading as an interactive process, the study draws on the cognitive work bench model which suggests that cognitively demanding processes such

as main idea construction may strain the limited resources of the reader's information processing system - specifically the reader's working memory. It also draws heavily on schema theory which suggests an explanation for the facilitative affect of prior knowledge on text comprehension (eg Anderson & Pearson 1988). Readers with high prior knowledge of the content domain have well-developed schemata into which they assimilate the information from a text. That is, as Voss et al (1980) put it

> [...] information from the text is mapped onto the reader's existing knowledge structure.

Afflerbach's eight doctoral students (four from anthropology and four from chemistry) came from a large state university in the USA. These students had related high background knowledge in their own field and low background knowledge in the other field. Two experimental texts from the two different knowledge domains were used after titles and sub-titles were removed. Following comprehension of the experimental texts, the think-aloud protocols (similar to the ones used in the earlier-mentioned studies) were transcribed using a transcription system designed to include features of the spoken reports.

The data were analysed to address several questions such as

> Does prior knowledge of the content domain of a text affect the specific strategies used to construct the main idea? Is the main idea constructed more automatically for a text on a familiar topic than a text on an unfamiliar topic?
>
> (p.35)

All strategies from Johnston & Afflerbach (1985) were used as a framework. These include three strategies for overall main idea construction (draft-and-revision, topic comment, and automatic construction) and two other strategies (initial hypothesis and listing).

The analyses of the data demonstrated that prior knowledge had a significant influence on expert reader's main idea construction strategies. Unfamiliar text necessitated significantly more frequent use of the construction strategies of draft-and-revision and listing. The protocol-reports show evidence that readers initially sought a framework for interpreting the text they read, and the more extensive the readers' prior knowledge, the more quickly and easily appropriate schemata were accessed and used to help build meaning. Findings of this study also provide evidence that main idea construction is not always automatic or elemental as suggested by Brown and Day (1983) and Van Dijk and Kintsch (1983),

> Conscious strategies, rather than automatic processes were used in the majority of situations.
>
> (Afflerbach 1990:43)

Again the verbal data indicate that the expert readers in this study were skilled in using strategies to understand text and monitor their own comprehension - an indication of the importance of non-automatic comprehension strategies, especially when they may be the only option available to the reader.

Carrell (1983) reports the individual and interactive effects of three separate variables on the reading comprehension of both native and nonnative ESL readers. These variables are all components of prior knowledge (context, transparency and familiarity). Two texts were used, one dealing with a familiar, the other with an unknown topic. Each text was presented with and without context and in either of two versions, with and without transparent words. After having read the texts, subjects (66 advanced and 42 high-intermediate learners representing different language backgrounds including Arabic) were asked to assess the difficulty they had in reading the text on a 7-point scale, following which they were asked to note down as many ideas from the text as they could recall. Results from the two groups were compared to results obtained from

a group of NS. According to Carrell high-intermediate and even advanced ESL readers tend to be

> [..] linguistically bound to a text. They may be processing the literal language of the text, but they are not making the necessary connection between the text and the appropriate background information.
>
> (Carrell 1983:200)

Carrell here, according to Faerch (1984), is distinguishing between literal processing and top-down/bottom-up in a way which is not very transparent. A different interpretation of her results, based on the distinction between top-down and bottom-up processing exclusively, would be that learners do not utilise information obtained via bottom-up processing for the purpose of top-down processing. Faerch, also compares Carrell's results with Kasper's (1980) analysis. of pragmatic comprehension in role-play situations. Kasper found two areas in which learners misunderstood the NS communicative intention

1- phatic talk being interpreted as referential talk; and

2- misinterpreting the intended illocution of action-oriented speech acts.

The two areas have been illustrated in the following way:

Example 1

Learner (taking leave from her landlady with whom she stayed for two years)

NS: I've got some sandwiches ready for you here. I hope it "ll be enough.

Learner: Yes of course, it will be enough

Example 2

Learner (on a holiday job as a strawberry picker) Hello Mr. Knox, here I am again with my basket.

NS (owner of a farm) : Oh hello Peter, how are you?

Learner : Oh, well I think I'm very fine now; well it's hard work but it's nice to have such good contact with people, you see I like it

Kasper's explanation is that the advanced learner in example one ignores the cue *'I hope'*, which together with her knowledge of the pragmatics of leave-taking, would have enabled her interpret the NS turn as a wish. Instead, she decodes the NS utterance literally from the bottom, and misinterprets the NS 's wish as a request for information. A similar explanation is provided for example two where the learner analysed the NS utterance by means of bottom-up processing and failed to connect the enquiry about learner's well-being to the frame 'opening-sequence specific phatic talk'.

Both Carrell's study on RS and Kasper's study on CS offer mutually supportive evidence from quite different quarters, that at least in certain situations, learners overrely on bottom-up processing.

Yet another study that focuses on top-down processing used strategically for problem-solving is **Cavalcanti's** (1983) doctoral thesis titled *The pragmatic of FL reader-text Interaction: key lexical Items as source of potential reading problem.*

The thesis analyses the relationship between key lexical items and potential vs. actual pragmatic interpretation problem areas in the introduction to an academic paper. This analysis is tackled from three different points of views, viz the analyst's, the material designer's and the FL reader's.

To identify potential pragmatic areas, Cavalcanti first developed a framework for the identification of key lexical items and applied it to the text as a data base. Then, taking up the key lexical items identified, she analysed their role in text and reader-text interaction with the aid of the notion of semantic and pragmatic strands. The results of this analysis provided an indication of potential reading problem areas which were later checked against material designer's point of view and verified in reader-text interaction

through an introspective technique. This final analysis accounted for the FL reader's point of view in respect to text difficulty.

The informants (4 Brazilian postgraduate learners of English) were trained to think aloud while reading, following Hosenfeld (1977) as closely as possible. The rationale for this procedure is expressed by her in the following manner:

> The use of this procedure in this thesis assumes that the identification of pauses, ie potential problem situations caused by either the reader's inadequacy or by the reader's hyperinterest in parts of the text [.] results from the natural slowing down of the processing of information. It represents shift from 'automatic' to 'controlled' processing in reading.
>
> (1983:297)

4.5 General discussion

The present study, it was stated in chapter one, is designed to look at the RS of subjects from two different disciplines, viz Arts and Science. Within this sampling, two other variables are also addressed, viz reading proficiency and reading in L1/L2. These caveats are essential in order to understand the discussions on the above presented studies. Therefore, the discussion will focus on

(a) The use of RS in L1 and L2 reading as investigated by Block, Cavalcanti and Carrell

(b) Proficiency variables as studied by Olshavsky and Carrell

(c) Background variables as seen in studies by Afflerbach and Carrell

(d) Strategy lists

(e) The research paradigm in these studies

a. The use of RS in L1 and L2

Block's study looked at the reading behaviours of L1 and L2 readers. The nonproficient readers' RS were compared with those used by native speakers. Also one of her passages was translated into the L1 of her ESL subjects to determine

whether they were competent readers in their L1. The ESL subjects, therefore, read one passage in their L1 and one in English, while the NS subjects read both passages in English. Block's results suggest no distinguishing patterns between ESL readers and NS readers. Instead

> in each language group, one reader integrated information more consistently than the other readers, recognized text structure more frequently.....
>
> (Block 1986:485)

On the basis of her results Block concludes that

> the development of strategy use, particularly as it is applied to informative text, does not seem to depend on language-specific features
>
> (p. 485)

Cavalcanti's study had a very small sample of Portuguese subjects and their reading strategies were compared to a set of NS readers. Her results indicate that readers read differently in their L1 than they did in English, making fewer pauses. The third study to consider the language factor is Carrell's who compared recall of passages between ESL and NS. She found that all her three components play a role in the way NS read, understand and recall passages. ESL readers, on the other hand, were found to be different from the NS

> they are not efficient top-down processors, making appropriate predictions based on context, nor are they efficient bottom-up processors, building up a mental representation of the text based on the lexical information in the text.

There seems to be a disagreement between the views as presented by these studies regarding the use of RS in L1 and L2.

b. Proficiency variables

Within her ESL group Carrell also had a proficiency variable, viz high-intermediate and advanced learners. In the recall of passages and their use of the background variables,

only advanced readers were affected by one of the factors, familiarity. In this respect they were more like NS. Her results show that

> good readers utilize background knowledge differently from poor readers.
>
> (Carrell 1983:201)

Besides all ESL readers in Carrell's study tended to be linguistically bound to a text. Carrell concludes that the NS utilises all three components of background knowledge - context used in top-down processing, textual transparency clues used in bottom-up processing and familiarity with the topic, which had the effect that novel information was more memorable than familiar information. Neither groups of nonnatives utilised context or textual clues.

Hosenfeld, too, found many differences in the use of strategies between her successful and unsuccessful readers. She describes these differences as follows:

> It is not that successful readers never look up words in a glossary. They do. But only after more efficient strategies have failed. A distinguishing characteristic of successful and nonsuccessful readers is the priority system of their word-solving strategies: while looking up words in a glossary is a nonsuccessful reader's first and most frequent response, it is a successful reader's last and most infrequent response to unknown words.

Generally the good readers kept the meaning of the passage in mind as they read; they read in broad phrases, skipped words they viewed as unimportant to total phrase meaning, and so on.

Olshavsky's good and poor readers, on the other hand, did not show a difference in their use of strategies, except that the good readers used strategies more frequently than poor readers. Again there seems to be a disagreement on the proficiency variable as well.

c. Background variables

Carrell's study also utilised different components of background knowledge, viz familiarity, context and transparency. Each of these three components was treated as a dichotomous variable, each having two opposite values. The results were interpreted in relation to the L1 /L2 and the proficiency variable, already discussed earlier.

The familiarity component in Afflerbach's study was used in a slightly different context. The subjects, all expert readers, all NS, were given two texts, one familiar and one unfamiliar and were asked to construct main ideas for them. Their verbal reports show a direct effect of the domain on the strategies they used. The study found that expert readers automatically constructed the main idea significantly more often when reading texts about familiar topics.

d. Strategy lists

The studies on strategies usually have strategy lists as their final product. The RS studies are no exception. Olshavsky, Block and Hosenfeld all present lists of reading behaviours. The schema studies offer insights of a qualitative basis, much of which has already been discussed above.

The most obvious line of strategy identification these studies follow, as is shown in the lists, is the binary distinction. Thus we find Olshavsky making a distinction between word-related and clause-related strategies (in her discussion she also distinguishes between problem-identifying and problem-solving strategies). Block's general and local strategies include comprehension-gathering, comprehension-monitoring as well as linguistic specific strategies. Hosenfeld's main-meaning line strategies describe what the reader does when he ascribes meaning to sentences in an uninterrupted manner and

Table 4.7.1
Strategy lists from Olshavsky, Hosenfeld and Block.

Olshavsky 1976-77	Block 1986	Hosenfeld 1977
WORD	GENERAL STRATEGIES	MAIN MEANING LINE STRATEGIES
1. use of context	1. recognise text structure	1. ascribe meaning to sentence
2. synonym substitution	2. integrate information	2. ascribe meaning to words
3. stated failure to understand word	3. use general knowledge and association	3. ascribe meaning to phrase 4 assigns incorrect meanings to words/phrases
CLAUSE	4. interpret text	
4. rereading	5. question information	5. omits unimportant words
5. inference	6 monitor comprehension	6. omits important words
6. addition of information	7. correct behaviour	WORD-SOLVING STRATEGIES
7. personal identification	8. react to text	7. stops at unknown words.
8. hypothesis	9. anticipate content	8. decodes
9. stated failure to understand clause/sentence	10. comment on behaviour /process	9. skips the words. 10. use context of sentence/passage
10. use information about the story.	LOCAL STRATEGIES	11. use grammar concepts 12. look up words in glossary
	11. paraphrase	
	12. reread	
	13. question meaning of clause/ sentence	
	14. question meaning of word	
.	15. solve vocabulary problem	

her word-solving strategies describe what he does when he comes to an unknown word or phrase.

Each of the above taxonomies have, therefore, certain common criteria as well as differences. Problematicity is clearly a criterion for both Olshavsky and Hosenfeld but

not for Block. Yet, whereas Hosenfeld includes uninterrupted behaviour as strategic, Olshavsky has tried to relate problem to strategy use. Hosenfeld, in her comment on her list of RS of successful readers, sums up the aim of these lists in that they

> [ ] should not be viewed as a definitive or comprehensive list but as the beginning of a list to be completed and modified by further research.
>
> (1977:123)

e. Research paradigm(s)

Yet another striking feature of these studies is the use of identical elicitation techniques. All the studies (except Carrell's) have used the verbal protocol method as a means of collecting data. The procedures used by Olshavsky, Block and Afflerbach are very similar. Hosenfeld has used the same technique in interview-based settings, asking readers the hows and the whys of their reading procedures. Cavalcanti has avoided the use of cues and has left the decision to the readers. Since the issue of the research paradigm is very important to the present work, it will be elaborated in the following chapter, which deals with this very issue.

4.8 Summary

This chapter reviewed six major studies in reading strategy research. These studies give a picture of the way research on RS has considered how some factors such as proficiency level, schemata and background knowledge can affect the use of different reading strategies. It thus provides the theoretical impetus for the present study. Empirical research is scanty though stable and its foremost stability lies perhaps in the research paradigm used. There is also consistency in the variables addressed since most researchers have tried to look at sets of natives versus non-natives, or readers of different background knowledge and proficiency levels.

How many of these variables are to be incorporated in the present inquiry and and in what form is the focus of the following chapter.

CHAPTER FIVE

A Multi-Method Approach To The Study Of Reading Strategies

5.1 Introduction

In chapter two I discussed the use of a strategy in a given situation. According to the definition as stated in that chapter

- there should be a goal
- the learner should be facing a problem
- s/he should be conscious of that problem

In chapter three the problem area was considered. In reading a text, the reader can face either systemic or schematic problems, depending on what he is trying to achieve from a reading passage. Here a RS has been defined as a conscious effort on the part of the reader to tackle a reading problem. Chapter four surveyed studies that have dealt with RS. The framework of the six studies reviewed in the previous chapter can be summarised in the following table:

Study	Paradigm	Groups	Procedures	Reading Model
Olshavsky (1976-77)	Protocols	L1 only	cued pauses	Problem-solving
Hosenfeld (1977)	Protocols	L1 and L2	interviews	unspecified
Block (1986)	Protocols	L1 and L2	cued pauses	unspecified
Carrell (1983)	Recall tasks	L1 and L2	unspecified	interactive
Cavalcanti (1983)	Protocols	L1 and L2	uncued pauses	interactive
Afflerbach (1990)	Protocols	L1 only	cued pauses	interactive

In this chapter I examine the strengths and weaknesses of the research paradigm used, the need for an alternative/ complementary paradigm and then move on to describe the

design that has been chosen for this study, outlining the different stages that form the components of the design.

5.2 Information needed for the present study

The aims of the present study as stated in the opening chapter are

1- to identify the range and variety of RS used by the tertiary learners in the Yemen as they read textbooks in English.

2- to discover whether there are differences in strategy use in L1 and L2.

3- to discover whether the use of strategy is affected by the familiarity and unfamiliarity of text content.

4. to identify whether strategy use is affected by reading proficiency.

5- to classify the strategies identified into a framework that could be compared to the existing lists, and that could be used by researchers and teachers.

5- to draw implications for theory and pedagogy.

The framework of methodology and analysis the above studies use does not provide a satisfactory explanation of the nature, purpose and significance of identifying RS. This is due to the single track of the data collection followed in all these studies (barring Carrell's). Whereas these techniques (the protocol analyses) normally yield sufficient and unambiguous information on this selected phenomenon, they provide only limited view of the complexity of the reading process and of the situation in which it takes place.

It has been stressed (Cohen & Manion,1980,1989) that as research methods act as filter through which the environment is selectively experienced, they are never atheoretical or neutral in representing the world of experience. Exclusive reliance on one method, therefore, may bias or distort the researcher's picture of the particular *slice of reality he is investigating*.(Cohen & Manion 1980:208). The researcher needs to be confident

that the data generated are not simply artifacts of one specific method of collection. And this confidence can only be achieved when different methods of data collection yield substantially the same results.

Another weak point in the reviewed studies is that they do not provide grounds for constructing a conceptual framework for the identification and analysis of RS. This is due to

a) the lack of coherent conceptual framework within which RS are to be grounded

b) the superficial nature of much of the research in that it neither explains the problems of strategy identification nor provides any practical recommendations as to how to tackle the problems

c) the failure of much of the research activities in the field to keep up with change within research methodologies taking place in the academic disciplines such as comparative studies.

Most pertinent to the present discussion is the first point - a coherent conceptual framework within which RS are to be grounded. This has been pointed out in chapter three during my discussion of the reading models. There I have concluded that the identification and analysis of RS depends substantially on the model of reading that is adapted in a given situation. Here I again stress this particular point. According to Devine (1988:127) a model might be understood as

> a set of assumptions about what happens when people read, that is, about the ways the readers go about deriving meaning from a printed text.

For a reader approaching a text, a model of reading can be regarded as the guiding principles by which that reader will process the information available. As Harste & Burke (1977:1) explain an internalised model of reading is a

> theoretical orientation- a system of assumptions through which experiences are organised and acted upon.

Harste & Burke (1977) also report studies that have focused on readers' theoretical orientations or models of reading. They found that even very young readers (age six) could explain what they did when reading and were able to articulate their notions about what constitutes good reading. These researchers identified three distinct models of the reading process, viz sound-centred, word-centred and meaning-centred. Similarly in this study three models of the reading process have been identified, though not in the same manner. What I am trying to emphasise is that it is only through setting a coherent conceptual framework for the study of RS that one can avoid the superficial nature of the whole approach.

5.3 The need for an alternative/complementary paradigm and methodology of research

My earlier discussion concerning the existing paradigms and their weaknesses certainly calls for a need for alternative paradigms for the identification and analysis of RS, or complementary paradigms which will account for the gaps in the existing ones. But which one might be appropriate and on what criteria ought they to be based? The present researcher suggests the following criteria as elements for the construction of a new model for the study of RS.

a) The model should overcome the narrow and conflicting nature of the existing paradigm. This paradigm should be working within the holistic paradigm.

b) It should be looked at as an essential and major step for the construction and articulation of paradigms of different levels.

c) The model should represent a case or problem under consideration, that is take a case or a problem as a paradigm not a paradigm as a case or problem. In other words, the stress should be on the RS and their identification and not on the tool of investigation.

d) Instead of working solely or relying completely on the existing concepts and terminologies, and giving them new meaning or new uses, the model should involve the construction of new concepts that accommodate the new perspective and outlook.
e) The model should look at the problem under investigation as being influenced by a number of contexts and variables that have effects, with varying degrees, on the performances of the subjects.

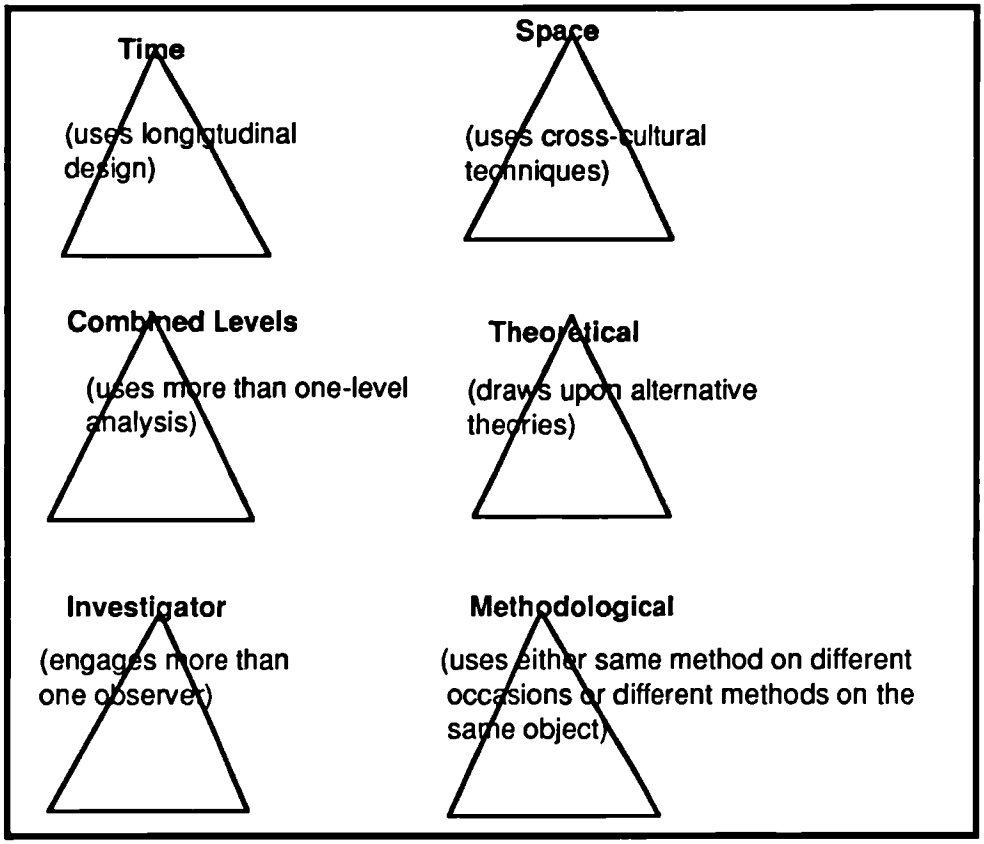
The proposed model in this study is based on what is commonly known in the research field today as triangulation (Cohen & Manion 1980).

5.3.1 Triangulation

Cohen and Manion (1980) define triangulation as the use of two or more methods of data collection in the study of some aspect of human behaviour. The use of multiple methods, or the multi-method approach as it is sometimes called, contrasts with the single method approach that characterises so much of research in the social science. In its original and literal sense, triangulation is defined as a technique of physical measurement such as employed in maritime navigation by using several location marks to mark a single spot or objective. By analogy, triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint, and, in doing so make use of both quantitative and qualitative data.

According to Cohen and Manion (1980) Denzin (1970) has extended the use of triangulation to take in several other types as well as the multimethod kind which he calls methodological triangulation. (see Figure 5.A).

Figure 5.A
The various types of triangulation in research, based on Denzin's (1970) typology.



In his typology Denzin (1970) identifies two categories for the methodological triangulation: ***within methods*** and ***between methods.*** Triangulation within methods concerns the replication of a study as a check on reliability and theory confirmation and triangulation between methods involves the use of more than one method in the pursuit of a given objective; it also embraces the notion of convergence between independent measures, as a check on validity.

In its use of multiple methods, triangulation may utilise either normative or interpretive techniques, or it draws on methods from both these approaches and uses them in combination.

If we consider the normative approach, we find that the scientific method has become the basis of this approach to the study of man which seeks to explain his behaviour in society. Behaviour from this perspective is synonymous with the individual's response to such expectations. In attempting to explain man's behaviour, this approach tends to portray him in mechanistic terms as operating in the way he does as a result of internal and/or external causes. Explaining man's behaviour from this point of view requires the social scientist to adopt the perspective of a detached, outside observer, intent upon classifying what he sees and hears in the light of some theory he holds about the way in which society is structured. This approach is essentially the same as the natural scientist's and is designated as positivistic. Two particularly important aspects of this approach to the study of man are the mechanistic image of man it implies as well as the concept of behaviour as being man's response to the present environment.

In accordance to this approach, in education, the evaluation of language teaching has normally been undertaken along the lines of experimental paradigms. This involves the testing of hypotheses through the performing of an experiment, which in turn involves the control of variables. The data so gathered is objective and quantifiable, analysed to show statistical significance of that specific aspect in language teaching.

An alternative approach to this normative paradigm is the interpretive approach. This involves working from a model of man that takes account of the human attribute, where man is considered

> an entity who is capable of monitoring his own performance. Further, because he is aware of this self-monitoring and has the power of speech, man is able to provide commentaries on those performances and to plan ahead of them as well. Such an entity, it is held, is much inclined to using rules, to devising plans to developing strategies in getting things done the way he wants them doing.
>
> (Harre & Secord 1972, quoted in Cohen & Manion 1980:24)

In this anthropological research paradigm, the investigator assumes the role of a participant observer rather than an outsider. He observes what is going on in the classroom through the eyes of the participants. He interviews the participants, asks them to keep diaries and to fill in questionnaires about their attitude to the subject of inquiry and in the light of their observations he tries to interpret the effects of the variables. He does not exert any control on the variables influencing the teaching-learning situation, and does not aim, in most cases, at generalising his results. The results are interpreted in relation to the context where it took place but cannot be expressed through general laws. Fundamental for those who argue for an anthropological paradigm is the notion that it is impossible to control and predict the laws which regulate human behaviour.

In presenting what appears to be competing paradigms in educational research, it is not the aim to discard one in the favour of the other. Rather, I think that both perspectives are necessary and inseparable aspects of a fuller understanding of man's behaviour and experience. Instead of viewing each approach as separate and self-enclosed, it is more profitable to see all paradigms as mediated by others.

5.4 Rationale for the type of paradigm employed

The reading process, as it has been argued, is so complex that the single method approach, if employed, yields only limited and sometimes misleading data. Yet strange enough this is the method that has been used, not only in investigation of RS, but in educational research as a whole. It is only comparatively recently that the utility of the multiple-method approach has come to be recognised in educational research. Cohen and Manion (1980) list the following instances of where triangulation in educational settings is said to be appropriate:

1. Settings, where a more holistic view of educational outcomes is required. A study on the effects of praise and blame on the outcome of reading instructions, carried out by

Cronbach and reported by Isaac & Michael (1971), showed no significant differences among the groups on the criterion 'gain in reading'. It was suggested that had a second criterion been used, such as attitudes towards reading, a significant treatment difference might have been found.

2. Triangulation has special relevance where a complex phenomenon, such as a comparative study of formal and informal classroom, requires elucidation.

3. It is also appropriate when different methods of teaching are to be evaluated.

4. It is equally useful when an established approach yields a limited and often distorted picture. By using or drawing from different data collection paradigms, contrastive perspective can be disclosed.

The main problem facing the researcher deciding to use triangulation is that of the methods to be selected. Once these are selected there is the issue of combination and how to use the data so collected. I tackle these problems in the following sections.

5.5 Discussion of research instruments

From the perspective taken in this thesis a RS entails a conscious effort on the part of the learner to solve a problem in reading. Assessing the student's RS clearly requires the use of a range of reading research instruments. This range will have to comprise tasks which can throw light on the reading process, which implies taking the major decision of moving one step back in shifting from RS to what exactly constitutes the nature of the problem in SL reader-text interaction. It also brings into focus the need for deciding whether the need is for process information or product information or both.

Since reading comprehension is a mental activity, it is only available for indirect, second-hand scrutiny. We can never actually watch the mental operations, but must infer them from other sources of data. In order to be so informed, we should

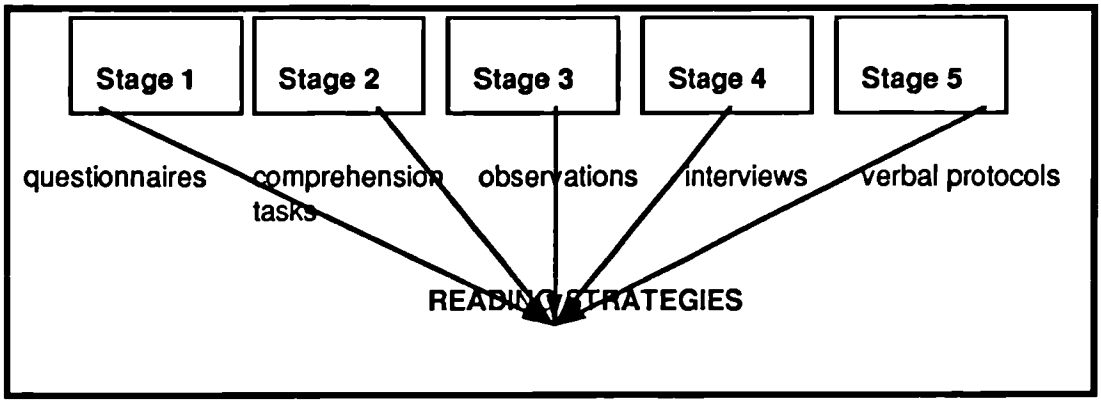
understand the actual demands and assumptions in an assessment technique. Much research has been done regarding the advantages and disadvantages of the various social and educational instruments, and these can be briefly summarised into observations, interviews, pre-tests, post-tests, examination of current records, measures of achievement in the various skills and examination of past documents.

In this study the following research instruments are employed: ***questionnaires, comprehension tasks, classroom observations, structured interviews, and verbal protocols.*** These are combined into a five-stage model. The model takes the form of methodological triangulation, or rather triangulation between methods, in the sense that more than one method is used in the pursuit of the objective, in this case, RS. That is, rather than following one line of investigation and disregarding the other, the research to be discussed here tries to approach the identification and analysis of the RS from an experimental and non-experimental perspective. As we have seen each of these approaches provides data of a different nature which can be equally useful in the task of evaluation, making it more thorough by providing different sets of data which can be played against each other in the interpretations of results.

It is hoped that by combining both these methods, the study can build up as full a picture of the investigated area as time and facilities has permitted. Below, as I describe the different stages of the model, I also justify the choice of the instruments and explain how these were used.

5.5.1 Stages of the model

The model, as stated earlier, consists of five stages. The sequencing of these stages simply means the order in which they have been conducted. They can be presented in the following manner:



Stage One: The decision to use **questionnaires** as stage one in the elicitation of data is based on the assumption that by conducting a well-designed questionnaire it is possible to survey the learners' approach to reading in both English and Arabic. This can provide a quick insight into the 'theoretical orientation' that has been discussed earlier. The questionnaire is made up of two sections, viz section *one* where the respondents had to provide some information regarding their language learning experience, as well as attitude, motivation and needs, and section *two,* where the questions are basically on reading. The language experience is so integrated with the reading experience of a learner, especially a SL learner, that it would have seemed totally superficial to go directly to reading without getting some insight as to the learners overall language experience.

Stage Two: The **reading comprehension stage** is made up of a cloze test, with questions, and two recall tasks. The classical ***cloze*** test (Taylor 1953, Oller 1979) is a test consisting of a connected passage of prose in which individual words have been removed in a systematic manner. The standard test construction technique involves deleting every nth word (where n usually varies from 5 to 10) and replacing it with a standard blank. The cloze test has been long termed as a measurement of behaviour which provides with product information on a quantitative basis. The distinguishing quality of cloze tests as stated by Oller (1979:347) is that

> they require the utilisation of discourse level constraints as well as structural constraints within sentence.

The cloze test has been used to assess comprehension in many experimental studies. While it is often used as a product measure, it is perhaps most informative when used as a process measure. As a product measure it does not tell us why readers do what they do. No doubt, the cloze procedure has its problems, especially if the strict criterion is used in marking, that is, if a response is only considered correct when it is an exact replacement of the original word. I tackle this problem in the analysis chapter (Chapter 6).

In this study the cloze test is used for two purposes: as a comparative measure (product) among the two sets of subjects as well as a check on the reader's adequacy in so far as linguistic and psycholinguistic features of the text are concerned. The cloze passage is followed by a set of questions that require the subjects to give reasons for selected response. This provides the researcher with some insight into the types of strategies the testee is using (process) while dealing with a connected passage. The great value of the cloze procedure in the testing of reading comes because cloze gives students practice in the essential ability of guessing and predicting from context. The cloze context includes the words on the page as well as the reader's knowledge of the language and of the subject matter of the text being read. By deleting words from a passage, cloze brings out into the open students' guessing and predicting strategies. Filling in cloze items in a reading task also involves an awareness of the flow of discourse across sentences and paragraphs as Oller (1977:43) maintains.

The cloze test in this study consists of a passage - a narrative - where every seventh word has been deleted. The passage consists of ten blanks and is of general interest and average difficulty (as the results indicated) to all subjects.

Another task included at this stage was the recall task. The use of the ***recall*** technique is not very clear in the reading research. As used by Kintsch and Dijk (1978), for

example, recall protocols seem more like product measures than process measures. The researchers looked at problems of text cohesion and gist information as components of comprehension processes, and the generation of recalls and summarization's protocols as output processes. Subjects were asked to read typewritten texts at their own speed and then recall the whole report. They were required to type their protocols into a computer-controlled screen as well as edit and change them. Following that, they were asked to write a summary of the report. In this manner these tasks are free recalls (Johnston 1984) and tell us something about the things that *are* recalled (Kintsch 1974, Spiro 1977), though

> we can say nothing about the comprehension or memory of what is not recalled
>
> (Johnston 1984:55)

There are a number of possible problems confronting the researcher as far this technique is concerned. The reader must first clearly understand what is required in terms of the level of detail he or she is being asked to retain and reproduce. Production skills, oral or written, are also required and production expertise differs across individuals. Unfortunately, reading comprehension skills and production skills are not perfectly correlated. Consequently, failure on a reading comprehension assessment task requiring production cannot be clearly attributed to production or comprehension skills separately. One will, therefore, have to be wary of drawing unwarranted conclusions, such as, for instance, less fluent readers remember less of the information.

In this study subjects were asked to read two passages (one on a familiar topic and the other on an unfamiliar one) and then, after reading each passage, go on to the recall sheet and write down as many ideas as they could recall from the passage. The main purpose was to get the percentage of ideas recalled from each text. This was considered essential to provide a comparative measure regarding the background knowledge component.

The reading booklets for the tasks for each of the two between subject's conditions, containing the texts, were distributed to the subjects in their regular classroom. The titles from both texts were removed. The passages were of equal length (220 and 223 words). Written instructions at the beginning of the tasks were gone through orally with the subjects by the researcher. Subjects were told that they could spend as much time as they wanted on each page in the booklet, but that once they had turned a page and gone on, they could not look back at the previous page.

Next they were told to go to the result sheet on which they were to write down as much as they could remember from the passage, as many ideas from the passage as they could recall. Subjects were also asked to rate the passage's comprehensibility, ie how easy or difficult they thought the passage was to understand. This comprehensibility variable was the second dependent variable in the recall tasks and it aimed at providing a picture of whether difficulty of task affected its recall as well.

Stage Three: Classroom observation was not as easy an option as the questionnaire or the comprehension tasks. However, since this study is concerned with the strategies readers use while reading textbooks (in and outside the classroom), it was essential to include observation as one of the instruments, in order to analyse students' reading behaviour. An objective observation of the learners in action in a typical, formal, classroom situation, no doubt, can throw light on the stand the learners take regarding their reading habits. It is a technique that can often reveal characteristics of groups, or individuals which would have been impossible to discover by other means. According to Bell (1987) direct observation may be more reliable than people say in many instances.

In his book, **Analysing Teaching Behaviour**, Flanders (1970), outlines the purposes and applications, as well as the coding and analysing of classroom interaction. There are in existence many hundreds of classroom observation instruments in the Flanders' 'interaction analysis' tradition (eg Moskowitz's 1976, Mitchell et al 1981, Bowers 1980, Ullman and Geva 1984). All of them are essentially adaptations, extensions or simplifications of Flanders' original categories of description for classroom verbal behaviour. Flanders views observation from the teaching side. In this study it has been used to serve as an instrument to observe learners during reading sessions. According to Flanders, classroom interaction is a chain of events which occur one after the other, each occupying only a small segment of time, and ***teaching behaviour*** are acts by the teacher which occur in that context. By analogy, a ***learning behaviour*** can be defined as an act by the learner in the context of classroom interaction. Often during classroom interaction, the same sequence of events occurs again and again; such a sequence is called a pattern, which in turn can be labelled to facilitate thinking.

Observation schedules have been used in studies conducted by Naiman et al (1978) and O Malley et al (1983, 1985) to provide access not only to students' perceptions of the learning context and individual learning styles, but also as objective measures of the very same phenomenon. It is believed that by observing learners' performance in a reading class, some insight can be drawn of their use of RS. A guided check-list on the verbal behaviour of the learners during a reading class can prove fruitful (see, for example, Morrow & Smith 1990).

There are a number of ways of recording what happens in the classroom (for a detailed historical review of observation instruments, with sources, see Allwright 1988). It is impossible to record everything, so one needs to be clear whether one is interested in the content or process of a lesson, interaction between individuals, in the nature of the

contribution by teacher, pupils, or in some specific aspect such as the effectiveness of a questioning technique.

In a well-financed project with a team of researchers it may be possible to record or even to film what is happening in a class. However, in this study, as with all small projects, there were not enough facilities to deal with audio recordings or video tapes, and therefore, other methods had to be found which would enable the researcher to record on the spot in an orderly way so that after the event, analysis is quick and easy. As such there are many published observation schedules and accounts of observing individuals and groups in different contexts (eg Flanders 1970, Cohen 1976), several of which are based on a system of interaction process analysis devised by Bales (1950). The Flanders' system is one of the best known ones.

Data for the observation sessions were collected on dual sheets. The first sheet was used by the observer, in this case, the researcher. On this sheet the researcher made notes of the interaction (*response* as well as the *initiation* types, see Appendix C1) that occurred during the reading session with regard to the learners only. The second sheet (sheet B) was distributed to the subjects in each group during the reading observation sessions. Subjects were asked to write down any ***problems/solutions*** or ***questions*** that occur to them regarding the reading texts or tasks as they went through the lesson. Six category types were decided upon, based on Morrow and Smith (1990). These categories are *focus on content, focus on structure, focus on meaning, focus on print, focus on illustrations and other* (Appendix C3).

Stage Four: The **structured interview** aimed at providing detailed information of the selected readers' profile (eg attitudes, reading habits, etc). It, therefore, enabled the research to get as much information concerning the subjects as was considered necessary. The students were asked about their SLL experience, including the time

they spent in reading books in the TL and their attitudes towards the learning of English.

The interview has been proved to be a useful research technique, though with certain short comings. A major advantage of the interview is its adaptability. It is said that

> A skilful interviewer can follow up ideas, probe responses and investigate motives and feelings, which the questionnaire can never do. The way which a response is made (the tone of the voice, facial expression, hesitation, etc) can provide information that a written response would conceal.
>
> (Bell 1987:70)

Through the interviews one can identify the readers' awareness of metacognitive aspects of reading and their use of strategies to achieve comprehension. In this study the interviews were conducted side by side with the verbal protocols.

Stage Five: In the **verbal protocol stage** the subjects were asked to think-aloud as they read passages in Arabic as well as English. There are several issues that are to be dealt with if one is to use subjects' reports as data in reading research. One must, for instance, respond to the strong doubts that have been expressed by many psychologists in the past and about the suitability of subjects' verbalisations as scientific data. Also to consider is the processing that must take place in order to transform subjects' behaviour into data. Besides, one must specify the processes that allows one to go backward from the data to the behaviour and thence to references about the subjects' thought processes

Since the triumph of behaviourism over introspectively-oriented viewpoints, verbal reports have been suspect as data. On the one hand verbal responses provide the basic data in standard experiment paradigm. On the other hand, modern psychology has been dubious about verbalisations produced by subjects along the route to their solution or final responses. Even more dubious has been the status of responses to experimental probes or retrospective answers to questions about prior behaviour. All of

these sorts of verbal behaviour are frequently dismissed as variants of the discredited process of 'introspection' (Nisbet & Wilson 1977). Introspection, it has been generally argued, may be useful for the discovery of psychological processes; it is worthless for verification.

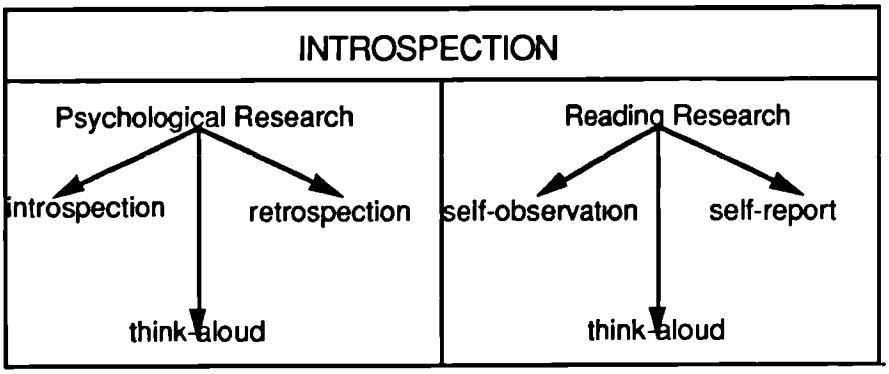
One main reason for this attitude is that there are no clear guide-lines to distinguish 'introspection' from the many forms of verbal output that are routinely treated as data. Also no distinctions are made among such diverse forms of verbalisation as think-aloud protocols, retrospective responses to specific probes and the introspective reports of trained participants. All these are jointly and loosely termed as 'introspection' in psychological literature (Ericsson & Simon 1984). **Introspection** requires the subject to report his process as it occurs, often in response to probes; **retrospection** requires the subject to read an entire selection and then afterwards to respond to it in total, or by reading it a paragraph at a time, while **think-aloud** requires the subject to think aloud as s/he solves a problem.

5.5.1.1 Introspection and reading

If in psychological literature 'introspection' is an umbrella term for think-aloud, introspection and retrospection, in reading research (except, perhaps in Olshavsky 1976-77), it is used to include self-observation, self-reports and think-aloud (eg Cavalcanti 1983, see 5.B). It in this sense that it will be used in the present work.

As used in theoretical linguistics, **self-observation** (the most commonly used technique) characterises the theoretical approaches to reading and is, therefore, the basis of all reading works extending from Thorndike (1917) to Smith (1971).

Figure 5.B
Introspection in psychological and reading research



Self-report is not a common device in reading research. However, Cavalcanti, in her review mentions works developed by Marton & Saljo (1976) and Thomas & Harri-Augstein (1972,1979). In these studies subjects usually report on how they had gone about their reading of complex passages of prose. Some of these reports are done in interview-like situations and combined with recall tasks which are repeated at regular intervals.

Think-aloud was brought into reading research through the work of Olshavsky in L1, and Hosenfeld and Cavalcanti, among others in L2. It is usually referred to as 'verbal protocol'. As used in cognitive psychology to study problem-solving behaviour (Newell & Simon 1972) it requires the subject to think-aloud while tackling a task. The major difference between the way it is used in reading is that the subjects must read as well as verbalise. As such verbal protocols have been differently adapted in the above-mentioned studies to study RS. As adaptation is important for the present study, it is worth looking at it.

Olshavsky (1976-77) asked her subjects to think aloud after reading each clause of a short story. The subjects learned this procedure before the study began so that they

could respond in an ingoing manner with no time delay. The data were a record of each subject's exposed thought processes which pertain to each clause of the text. The researcher analysed the protocols for evidence of strategies. As used by Olshavsky, there is no time lapse in the protocol method between the reading and the reporting; the data derives from actual reading and not words or questions relating to the reading. Furthermore, the subject is not asked to theorise about his process. However, as adapted by her, the method becomes partly retrospective in the sense that the subject has to read some segment before he could describe his reading behaviour.

Hosenfeld (1976,1977) also asked her subjects to think aloud with several practice tasks. Because students differ in their ability to self-report, the number of practice tasks performed by students varied. Once the students were adequately describing their RS, they were presented the selected text and data were secured. In so far as verbal protocols are concerned, Hosenfeld's approach is very much based on interviews. The researcher interviewed with indirect rather than direct questions to obtain information that provided her with a complete description of the students' RS. These questions also helped her to consider *how* the information was obtained.

The adaptation of the verbal protocol technique in Cavalcanti's study developed from a series of four pilot studies (the last combined with a training phase) which consisted of asking the subjects to read silently and to think aloud whenever realising the occurrence of pauses in the reading process. Her aim was to

> [...] encourage silent reading in verbal protocols and thus overcome the drawback faced (....) that is reading aloud and verbalising only after large chunks of text had been read.
>
> (1983:287)

Cavalcanti's adaptation of the verbal protocol technique is different from that of Olshavsky's (who used dots) as well as Hosenfeld's (who used interviews).

Verbal protocols in this thesis have been used with the adaptation of the technique similar to that of Olshavsky (1976-77). The use of this procedure in this work assumes that problem-solving and interaction are closely integrated, and any attempt to explore the possibility of the Yemeni learners' use of problem-solving can only be achieved by setting stops in the reading passage that will demand a pause from the reader to think aloud. This method has been favoured to Cavalcanti's and Hosenfeld's for a number of reasons. Cavalcanti left the choice of the pauses to the reader, a demanding task, which does not guarantee any pauses. A reader may just go through the passage without signalling any pauses or, as has been assumed in that study, without facing any 'potential problem situations'. Besides, if the reader is also asked to monitor his reading and start reasoning aloud on the basis of the pauses detected, one is not sure of any successful outcome.

Hosenfeld's procedure is equally complicated and demanding. She interrupted readers with interviews as they performed reading tasks. Part of this procedure, ie interviewing and asking questions, has already been included in the other stages of the design, and therefore, a similar procedure with the protocols will seem redundant.

The method of protocols is considered as one of the instruments used to determine strategy use because of a number of advantages:

- the subjects report **behaviour** rather than process
- there is **no delay** between reading and responding
- the data are a record of **ongoing behaviour**, and
- the data are closely **related** to the text.

The protocol passages, based on narratives from English as well as Arabic, form the focal point of stage five of the data elicitation model. The reader was asked to read silently but stop reading when s/he came to a number, eg [1], [2], etc. At this point

s/he was asked to talk about what s/he was thinking at that juncture in his reading, and if s/he was facing a problem and how s/he was dealing with it.

5.6 The place of Arabic in the model

The main interest of the study lies in the RS the readers use in tackling reading problems in English. However, Arabic, the learners' first language was worth considering as far as the tasks were concerned. As such one of the aims of the study became the comparison of RS in L1 and L2. The study would have looked one-sided if no attempt was made to compare what readers did while reading a text in a L2 to their strategies in reading texts in L1. Therefore, subjects were asked questions, both in the questionnaires and the interviews, regarding their reading habits in English as well as Arabic. And as already stated, the think-aloud stage included a passage in Arabic. However, Arabic did not feature in the observation stage because the subjects do not attend reading classes in Arabic and consequently, cannot be observed doing reading lessons in that language. Also it did not feature in the cloze/recall task stage because that stage is made up of three different tasks, and to assume that all these tasks can also be given in Arabic as well, would have proved too demanding for the students as far as time was concerned.

5.7 Subject sampling

Subject sampling for the five stages of the design is two-layered; a set of 100 subjects participating in just the first two stages of the design, and a set, randomly selected from this group, consisting of 60 subjects, participating in all the five stages. The first layer provides a general picture of the concepts and outcomes of the reading comprehension and recall tasks whereas the second set provides a detailed, in-depth account of the subjects' reading strategies.

The participants are students of the two colleges discussed in chapter one, the CASE and the CE. These are in their first or second years of tertiary education. The CE students are referred to as BS and the CASE are called BA.

The BS group: These students are studying for the B.Sc. degree in Engineering. They start learning English in the V year of a 12-year schooling system. After eight years of English learning they have to secure a 65% at the GSSC level (with high levels in science and maths). Their university entrance exams include English as a compulsory subject. There are three different specialisations in Engineering and my subjects come from two of these (Electrical and Civil).

The BA group: These students are from the Department of English, CASE. Their university entrance requirement is made up of an average of 60% in the GSSC and an entrance exam, consisting of oral and written tests in the various skills, besides other requirements (eg Arabic). Their school background experience is similar to the BS group.

5.8 Conducting the pilot study

Due to the complexity of the design and the requirement that each subject had to go through the five stages, it was not feasible to pilot all the stages of the design. For example, the classroom sessions could not be piloted due to the time constraints and the pre-arrangement problems between the classes observed and the researcher. As for the other stages, these were piloted using different volunteers for different tasks. The various tasks were piloted in the following way:

a. The questionnaires were tried with volunteers from the University of London. Some twenty-five students responded. This helped in modifying, deleting, adding and categorising the various questions and the items within them. A data analysis was also

carried out of the piloted questionnaires, which clarified and facilitated certain coding and other technical problems.

b. The comprehension tasks, when tried with friends and colleagues (with background similar to my subjects), revealed certain problems which lead to the changing of the cloze passage from one on 'Pottery' to one on 'Boxing.' There were no detectable problems with the recall passages.

c. Very minor changes were required for the improvement of the ten questions of the structured interview. Although the open-ended questions were not very productive, they were retained after re-phrasing since the information to be elicited was very important to the study.

d. The English protocols were tried with a set of Yemeni students from the actual field of study since the technique was novel to the situation. Problems arising from the trial sessions led to training the participants in thinking-aloud. This was done in small groups of four/five subjects. Passages from their own course-book were used for the purpose. When trying the Arabic protocols, some modifications had to be made to where the pauses were to be made since it was difficult to ask the readers to pause at the marked junctures as they did in their reading of the English passages.

5.9 Summary

In this chapter I presented an outline of the research design and methodology for the study. I started by considering the methods used in the various studies on RS. I then considered an alternative/complementary paradigm that can be employed to study RS and decided upon the use of triangulation. The model that emerged out of this consideration is a multi-sided one, which has five stages. The remaining of the chapter was devoted to the discussion of the various instruments that are to be used in the data elicitation paradigms.

CHAPTER SIX

Analysing The Data

6.1 Introduction

Data for this study were collected during the period extending from April 1991 to June 1991 in Aden, in the Yemen. As stated in the previous chapter, the subjects for the study are students from two different colleges of the University of Aden. They were randomly selected from the I and II years of English (CASE) and from the I and II years of the College of Engineering. Subjects from Education will be referred to as BA students and those from Engineering as BS students. Whenever necessary, the levels will be mentioned, (example B1S= Ist year, College of Engineering).

The design of this study, as stated in the previous chapter, is based on self-reporting techniques either retrospective (questionnaires, interviews), or introspective (verbal protocols), cloze or recall tasks and to some extent on classroom observations. It is made up of five different stages, where a different data eliciting instrument has been used in every stage.

In this chapter I first describe the procedures I used in order to detect, classify and label RS in the different parts of the design, before I move on to the discussion and interpretation of the analyses in following chapters.

The analyses of any data depends on the elicitation techniques used. Following the two trends outlined in the previous chapter (see 5.3.1) the analysis can be categorised as descriptive and inferential (Bell 1987). Descriptive statistical methods provide 'pictures' of the group under investigation. These pictures may be in the form of charts, tables, percentages, averages and so on. These types of data can be subjected to

any statistical package and results achieved, based on what the aim is (eg finding the mean, the standard deviation, etc.). Inferential statistical methods have a quite different purpose; they may involve the use of descriptive statistics, but their prime aim is to draw implications from the data with regard to a theory, model or body of knowledge.

Data in this thesis have been analysed using both these procedures. The descriptive statistics, based essentially on frequencies, means, standard deviations and correlation techniques, will provide the basic picture of the use of RS across the design. Inferential (or qualitative) data, will be used to refer to data which undergo subjective interpretation rather than objective types of analysis. This will be used to explain the qualitative nature of the RS used as well as the individual characteristics of the readers. This, no doubt, presupposes the researcher's affective as well as cognitive involvement.

> To try to catch the interpretative process by remaining aloof as a so-called 'objective' observer and refusing to take the role of the acting unit is to risk the worst kind of subjectivism- the objective observer is likely to fill in the process with his own surmises in place of catching the process as it occurs in the experience of the acting unit which uses it.
>
> (Blumer 1969:86 quoted in Taylor & Bogdan 1984)

Therefore, with regard to the analysis of data in this study, the following methods, as summarised in the table below, are adopted:

Instrument	Subjects	Data type	Analysis
questionnaire	100	quantitative	descriptive
Cloze/recall tasks	100	both	both
observation	60	both	both
interview	60	both	both
protocols	60	both	both

6.2 Problems in detection, classification and labelling of RS

The task of detecting, classifying and labelling RS is not an easy one. There are many problems facing the researcher when it comes to analysing data, looking for RS, especially if it happens to be contained in a complex design such as the one used in this study. Studies dealing with the problems related to the naming and classifying of strategies are many and varied (eg Faerch & Kasper 1983b and Kellerman 1991 on CS, and O'Malley & Chamot 1990 on LS), although there are very few on RS.

Research on RS is in its infancy and, therefore, many important questions regarding the identification and labelling have not been clearly documented. In chapter four the different lists from studies by Olshavsky (1976-77), Hosenfeld (1977) and Block (1986) were presented through the review of literature on RS. These lists simply provide designations for certain behavioural aspects of reading. The three criteria outlined in chapter two, viz goal-relatedness, consciousness and problematicity, are not clearly related to the issue. Again the 'strategic' aspect of the behaviour is not taken into consideration. Studies of CS (eg Faerch & Kasper 1983b) point out that the task most central to the identification of CS, for example, is to find out whether there are specific features of performance which indicate that the planning/execution process leading to this performance has been strategic. When it comes to identifying RS the picture looks different. This may be due to the fact that

1. The identification and labelling of RS is not considered in the same frame of concept as, for instance, that of CS which can be easily confused with interlanguage errors.
2. To a great extent the task elicitation procedures in the case of RS are not open-ended; in fact they are more structured due to the use of verbal reports.

Therefore, unlike the error detection and interlanguage studies, studies on RS take a more direct approach to readers by asking them to tell what they know about their main monitoring behaviour or by directly inferring from the data whatever behaviour is

detected. The two forms that these studies take, protocol analyses and interviews, somewhat reduce the problems of detection of 'strategic' behaviour on the part of the coder. However, they do not lessen the problems of identification and labelling.

This is partly due to the vague procedures used in the RS studies. Where categories do exist, the broad definition of strategies poses another limitation so that it makes it a problem for the researcher to follow any clear-cut guidelines. Most studies have followed the following procedures:

1. Identifying pauses: The pause protocols as raw data are already roughly identified and delimited in the transcriptions, particularly if predetermined pauses are used.
2. Coding: After the identification of pauses, either naturally occurring (eg Cavalcanti 1983), cued (eg Olshavsky 1976-77) or induced (eg Hosenfeld 1977) they are numbered and coded. The coding depends on what the theoretical assumptions underlying the study are and it can go side by side with labelling
3. Labelling: Often pre-analytical categories are developed during the theoretical discussions and pilot studies. These are modified and refined to accommodate the responses of the participants.
4. Describing the labels: Then the studies provide definitions and descriptions of each label.

There seems to be some general consensus that a basic dichotomy is needed between the problem-identifying and problem-solving strategies, in the same manner as that of the division found in the CS classification. In the case of problem-identifying the reader simply states his problem either at word, sentence or content level, not attempting to solve it. After reading the first sentence a student will often say "I didn't understand the meaning of the last words". This response provides the researcher with no information concerning how the student attempted to assign meaning to the

unknown word or assign meaning to the remaining words in the sentence. To obtain this information, it is necessary to bring the subject's attention back to the beginning of the sentence. This can be achieved either through direct interviews (Hosenfeld 1977) or other methods (see below). To some extent they remind us of Non-Achievement or Avoidance strategies in communication.

In comparison to them the problem-solving strategies are more like the Achievement strategies (see Chapter 2), where the reader tries to expand his/her resources to achieve his/her goal in comprehending a text.

Although this seems to be a useful distinction, the term 'problem-solving' is rather ambiguous. It certainly depends on how a person views reading. If viewed as a problem-solving process, then the solution of problems are expected to be linked immediately with the problem identification behaviour. Although there is an interesting relationship between the two types, this is not often the case. Although it appears that a reader may achieve his goal of comprehending by first utilising a strategy of identifying problems which prevent him/her from achieving his/her goal this does not manifest itself in all cases. This is due to the fact that these problems may rise from various sources such as his/her low reading proficiency, lack of appropriate background knowledge, or lack of interest and not, necessarily, from constraints presented by the material, for example, difficult words or style.

The 'problem-identification' classification is also not void of problems. In Olshavsky (1976-77) it is used as a major class category whereas in O'Malley & Chamot (1990:137) it is one of their metacognitive strategies described as 'explicitly identifying the central point needing resolution in a task, or identifying an aspect of the task that hinders its successful completion'. I will elaborate on these issues of classification

once I have described my analysing procedures and, first discussed the preliminary overall use of RS across the design.

Yet another problem in classification and labelling of strategies facing most researchers is the ambiguity of terms. Researchers with different objectives and point of view have independently come up with different labels for what may be basically similar strategic reading behaviour. Conversely, different types of behaviour have occasionally shared the same label depending on the orientation of the researcher. For example Block (1986) defines 'Anticipate Content' as *'the reader predicts what content will occur in succeeding portions'* (p 472). This is similar to 'Hypothesis' defined as *'it is a prediction of the meaning'* by Olshavsky (1976-77:667). The 'Synonym Substitution' strategy in Olshavsky's list is used for the same kind of behaviour as Block's use of 'Paraphrase'.

Even where the same labels are used with the same definitions, the behavioural manifestation differs. 'Reread' is considered a strategy by Block if the reader "rereads a portion of the text either aloud or silently" (p 473), whereas Olshavsky is satisfied if the reader merely states that "I'm going to read this again" (p. 666). I consider this point as very vital in the classification and labelling of RS because both manifestations can be used by the same researcher depending on how you deal with the data. In the Olshavsky example, the reader is actually expressing his/her knowledge and use of strategy, whereas in the Block example s/he is only using the strategy. It is, therefore, easy to label the first case, since the reader has already provided it (the label) but the same is not true of the latter example. Here the researcher has provided the label depending on the behavioural act.

Taking up the point touched on earlier, therefore, the identification of problems (and consequently of RS) may be a difficult task for the analyst and as it has been pointed

out (Faerch and Kasper 1983b), that the presence or absence of a problem is to be seen as a continuum rather than a strict dichotomy. Besides SL readers may have developed idiosyncratic strategies to disguise their problem-solving situations. In the actual reader-text interaction, problem-solving strategies may have to be inferred by the analyst from the relationships between the problem identified and its solution or avoidance. Reading is to be seen based on two fundamental processing modes (Shiffrin & Schneider 1977:127): controlled and automatic (mentioned in chapter 3). Controlled processes are divided into two classes, accessible and veiled. The accessible processes are slow and easily perceived by the subject and the veiled are not easy to perceive through introspection because they take place so quickly.

Yet another problem is that of overt and covert behaviour. Some strategies occur overtly and are relatively easy to observe, whereas other strategies occur only covertly and require introspective forms of data collection to make the informant provide a description of the strategy used. Examples of overt strategies include 'note taking' and referencing skills, such as 'using a dictionary'. Strategies that occur overtly cannot qualify as mental processes. Nevertheless, the mental process underlying these overt strategies could easily entail such modes of processing as self-monitoring, summarising and and inferring (among other strategies). It is for these reasons that I group these overt activities as RS (see list below).

6.3 Rationale for labelling and classifying RS

The labelling and classification of RS are sensitive to a number of factors besides the problems cited above. These factors are proficiency level (Afflerbach & Johnson 1984), data elicitation techniques (Olshavsky 1976-77, 1978), the reading passages used (Hare & Smith 1982), the nature of the task (Bednar 1987, Kletzien 1986) and individual differences, such as intellectual abilities (Smith 1967). It is, therefore,

possible that the range and variety of RS detected in my data is specific to my experimental design.

The general format for the labelling and classification draws upon several of the existing taxonomies given in chapter four and the conceptual organisation is influenced by Block (1986) and O'Malley and Chamot (1990).

The classification which I have outlined for this study is based on the reading tasks, the situations and the elicitation techniques.

In using structured instruments (interviews and questionnaires) the appropriate principles for classification of responses were fairly clearly prescribed by the nature of the stimulus or the question and by the responses, except for the open-ended questions. In working with unstructured evidence, however, the first problem was to arrive at decisions about which aspects of the material are to be categorised, that is, what classification principles are to be used in establishing sets of categories. The first step was to develop working hypotheses that will yield classificatory principles. I proceeded by reading carefully through all the material from the observation sessions as well as the protocols, keeping alert for various clues in the data. Tentative categories were developed during theory formulation and the research design stages. These categories got refined and expanded during the field study. They describe the responses of the subjects and are not intended to exhaust the domain of the possible strategies

In my classification and labelling of RS I have adopted both methods mentioned earlier in the discussion, viz I used the labels provided by the readers as well my own categories to describe a reading behaviour where I had to infer from the protocols and the observation sheets. For example, in the observation settings, the subject would say

'I will refer to my physics books'. This is labelled as a 'Use References' strategy, but when the reader says *'I cannot understand how the tests will be on the ground'* I label this as a 'Question Information' strategy because that is the behaviour that one can interpret from the reader's protocol.

I preferred not to use a predefined list of strategies because I was interested in the range of strategies the Yemeni students might identify in the different situations. Some fifteen strategies or so have been identified in the literature on RS and I wanted to determine how much the list would be augmented by my own research. My list, therefore, consists of twenty four independent strategy types that were actually used by the students. Each strategy was given a descriptive name if it occurred at least five times, a method adopted from Olshavsky (1976-77). This resulted in eliminating five strategies from the original list, *'note-taking', 'anticipating content', 'translating', 'relating information to personal experience'* and *'correcting behaviour'.*

Note-taking, Translating, and Anticipating content

These three strategies were originally included in the questionnaire but they were very seldom used in the protocols or observation sessions and they, therefore, seemed more imposed on the readers then actually occurring in their reading; therefore they were dropped

Relating information to personal experience and Correcting behaviour

'Relating information to personal experience', which was again seldom used (in fact it was just used by one subject four times) was combined with another RS *'Use of background knowledge and association'. 'Correcting behaviour'* which only manifested in the English protocols and that too very rarely was dropped from the list.

The following is a preliminary list of strategies with their descriptions and examples as used in the various situations or modes. A word about the term 'mode' perhaps needs to be put in at this point. A mode will refer to the situation in which a particular RS will show to manifest itself. The Arabic protocols will represent one mode of manifestation, the English protocols a different mode and so on.

6.4 List of reading strategies (RS)

RS1 - Monitor comprehension

The reader assesses his/her degree of understanding of the text. This can either mean that the reader has actually avoided the issue and used the strategy as a escape route or it can also mean that the reader has actually understood the text. If it is the latter case then it is usually followed by the use of another strategy.

Examples

S8		*It is clear* (can mean that the reader is avoiding the issue).
S35		*It's clear but I couldn't understand when it said "then the ..."* (followed by the use of another strategy).
S53		*It is clear but may be it is new subject for me I can't recognise everything at once* (followed by use of another strategy).

RS2 - Question pronunciation

This strategy will seem a misplaced category since the reading was silent. However, as there were at least 15 occurrences of the strategy it qualified for consideration. The reader states his failure to pronounce a word or phrase; he either misreads the word or spells it out.

Examples

S4		*The word 'reliable', pronunciation of this word* (S mispronounces the word).
S34		*The pronunciation of the word 'component'; I don't know it - the letter 'c' may be pronounced 's' or 'k'.*
S52		*I can't pronounce the word s t r u c t u r e* (S spells out the word).

RS3 - Question meaning of word

The reader does not understand a particular word. This strategy occurred either by itself or together with the use of another strategy.

Examples

S7		*I don't understand the word 'reliable' and 'performance'* (used alone)
S1		*I understand what means by this sentence but I don't understand the word 'reliable'* (used here with RS1)
S49		*Yes I understand there are two main things that make aircraft engineering but I don't understand what is the meaning of 'component' and 'reliable'* (used here with another strategy).

RS4 - Question meaning of phrase

The reader does not understand the meaning of a particular phrase.

Examples-

S3		*Is clear. I think the phrase 'stress man' is difficult for me and the meaning of it is not clear.*
S22		*'Radio navigational' not clear* (used alone).
S43		*There is a difficult phrase 'as light as possible'; I don't understand that because the subject matter of the paragraph is don't understand* (used with another strategy).

RS5 - Question meaning of clause/sentence

The reader identified his/her inability to understand a clause or a sentence.

Examples

S6	*The sentence which says 'makes it perhaps a matter of life or death'... is not clear.*
S56	*I understand the meaning of words but I can't understand the meaning of the sentence.*
S59	*I face some problems, some words I can't under-stand its meaning such as 'that its performance is absolutely dependable'*

RS6 - Question meaning of paragraph

The reader is unable to understand the whole paragraph and states it.

Examples

S11	*Is not clear* (meaning the whole paragraph)
S10	*One word is difficult 'consequently' and I don't what understand all the paragraph, the meaning of the paragraph.*
S17	*I understand all the words, just there is some-thing I didn't understand from the whole paragraph*

RS7 - Question structure of sentence

The reader becomes aware of some difficulty in understanding the structure of the sentence.

Examples

S4	*The construction of the sentence 'out of the weight as much as possible'*
S23	*There are some words and sentences in grammar and cannot understand but this passage may be correct.*

RS8 - Question meaning of content

The reader expresses his/her inability to understand the content or the subject matter.

Examples

S13		*The content of the paragraph is not understand.*
S33		*I can't understand what is the job of the man.*
S44		*Is rather clear but there is a problem which I am facing- it is that I don't know the relationship between the aircraft and the radio navigational instruments.*

RS9 - Question information

The reader questions the significance or veracity of content.

Examples

S11		*I cannot understand how the tests will be on the ground of the structural....*
S37		*It is not clear here in 'two will....tests', it does seem like something not like an aeroplane because we know that aeroplanes flying in the sky not on the ground.*

RS10 - Comment on behaviour or process

The reader indicates awareness of the components of the process or expresses a sense of accomplishment or frustration.

Examples

S52		*I can't understand what is the meaning of this word 'manufacture' because I can't understand the main meaning of the sentence.*
S55		*I understand the meaning of some words but I can't explain that.*

RS11 - Guess

The reader guesses either the meaning of a word or the whole text.

Examples

S15		*About the subject of planemakers is understandable but the word 'reliable' maybe means 'strong'.*
S33		*I guessed the meaning; it is a case of checking the aeroplane.*
S36		*In the first one I found it clear but I found two words I can't understand what but I guess its meaning 'the thing of aeroplane.'*

RS12 - Infer meaning from context

The reader gets the meaning from the context.

Examples

S2		*'Consequently' is a word that I didn't know but I think this talks about the fuel consumption where fuel is another factor where engineers have to bear in mind.*
S60		*It is talk about parts; it is difficult for me; we have a lot of words which I don't know them like 'intended", etc. It talk about parts and separates. If you are engineering you will understand them, I think.*

RS13 - Paraphrase

The reader rephrases content using different words, but with the same sense. This strategy was used to aid understanding, to consolidate ideas or introduce reaction.

Examples

S21		*Here the weight of the load of each part that is how much weight each part must be taken into account; the stress man make the calculation for each part that are sent for the testing.*

S55	*The designer should calculate the normal load each part will. This specialist is called the stress man and he take account of any unusual stress that may be put on the part.*

RS14 - Summarise

The reader briefly states the concise meaning of the text. This could be either accurate or inaccurate. However, both were counted as the 'summary' strategy because they show the subject is actively attempting to comprehend.

Example

S2	*The careful design of aircrafts are essential.*
S39	*About how aircrafts makes.*
S21	*There are two things that make aircraft engineering difficult.*

RS15 - Get main idea

The reader tries to construct the main idea.

Examples

S38	*I get the main meaning, but there is some word like....*
S59	*The main idea of it how to make aircraft to fly easily by giving it a power of engine and a certain fuel consumption.*

RS16 - Use association and background knowledge

The reader uses his/her background knowledge either to extend, explain and clarify content or to associate it with other experiences.

Examples

S31	*There is one word 'fuel' which remind me that many things make from the fuel such as aeroplanes needed this fuel to move.*

S40	*In this paragraph I don't know what its mean because I know the word 'stress' gives the pronunciation but in this case I don't know.*
S29	*From my knowledge I can say that there are different types of engines and each engine has itself weight according to its type the fuel consumption can vary*

RS17 - Recognise text structure

The reader distinguishes between main points and supporting details or discusses the purpose of information.

Example (from Arabic text)

S36	*The writer is talking about the effect of age on the respiratory system especially at old age. In the beginning he talks of the muscles of the body in general and that is the reason why old people start feeling tired even when they do little work.*

RS18 - Reread

The reader reads the text again in order to solve a problem in reading.

Examples

S10	Problem- *how the bell contains is working*/Solution- *(rereads) with help of captivator which is put between battery and bell mechanism.*

RS19 - Integrate information

The reader connects new information with previously stated content.

Examples

S5	*Is going on from paragraph 5, then it is talking about how we test about the part of the aeroplane.*

S2	*..there is a question I don't understand..*(then goes on to the following text)... *clarifies what this question for each part it is to be tested on ground then some further tests are put to determine when each part should collapse or wear out.*

RS20 - Interpret

Using this strategy the reader draws his conclusion or forms a hypothesis about the content.

Examples

S2	*Performance is counted as an important factor in the design of aircrafts.*
S26	*I can see that when something goes wrong with the aeroplane then the pilot must, he must solve this problem; this can be done when he has an experience in this branch.*

RS21 - React to text

The reader reacts emotionally or otherwise to information or text construction.

Examples

S23	*May be I feel some words not in its correct place like 'the need'..*
S3	*..there is the word 'except.. a rise in temperature' the word 'except' is not suitable - I mean if the writer has used a different word, a better word in meaning.*

RS22 - Use dictionary

The reader stated in most cases that s/he uses a dictionary to solve vocabulary problems.

Example

S36		*The title is clear but I can't define it/ To look in the dictionary, English/English.*

RS23 - Seek Assistance

The reader asks T or another S about the problem he/she faces

Example

S33		*Yes I don't understand it* (meaning title), *I ask T or S.*

RS24 - Use references

The reader often stated that he/she will read other books to understand the meaning of the subject matter.

Example

S11		Problem- *when the circuit separate sets up?*Solution- *look the electric bell in the physics textbook.*

The findings from the different stages will be referred to these categories. I consider it essential that I first explain how I tackled each stage of my design as far as data analyses is concerned before discussing the results or embarking on any sort of interpretation. I start by describing how the Questionnaires were analysed.

6.5 Analysing the different categories of data

6.5.1 Analysing the questionnaires

The questionnaire consists of two sections, one dealing with questions on language experience and the other on reading. The reading section can be further divided into two parts (see Appendix A).

A high degree of structure in the data collection means that the instrument will have a strong influence on the content of the informants' responses. Since a highly structured questionnaire was used in this study, the problem of analysing it was minimised because, out of the thirty questions presented, only the last two required open-ended responses. The first 28 questions were scaled and the codes were used as presented in the original scales. Where scales were provided for the use of RS the statistical overview presented in Appendix A will be read according to the responses provided by the subject in such a way that 'always' and 'often' will be considered as positive answers whereas 'rarely' and 'never' as negative answers. For example, for question 14 the results will be read as (19+46=) 65% for the BS and (49+33=) 82% for the BA

Do you read word by word	always	often	rarely	never
BS	19	46	9	6
BA	49	33	10	8

This is done to make readings of results more interpretable and comparable to the other modes where the same RS is used.

The responses from the open-ended questions were categorised and coded accordingly. Basically four categories emerged for question 29, on problem-solutions in Arabic and English reading tasks. These were *'Use references'*, *'Seeking social assistance'*, *'Summarising'* and *'Rereading'*. For question 30, which asks for the subjects comments on their reading, again four categories emerged, viz *'Rereading'*, *'Questioning structure'*, *'Commenting on behaviour'* and *'Other'*.(see Appendix A).

6.5.2 Analysing the observation sheets

There were eight observation sessions in all, two for each group. Two different sheets were used in each session. Sheet B was given to the subjects for self-reporting on their problems and solutions as they went through each of the two reading lessons. Sheet A

was used by the researcher to mark the use of RS, if any, during these sessions. The categories of these sheets have already been described in the previous chapter.

Each of sheet B had 5 sections and at least one attempt was expected for each section. Therefore from the two sessions for each group, at least 10 responses were expected from each subject.

Responses from these sheets were pooled together for all the sessions, coded with reference to the RS list and computed on the statistical package 'SPSSx'. Of the 24 RS only 17 were detected in the self observation sheets.

6.5.3 Analysing the interviews

The Structured Interview used in this study had ten questions, three of which called for open-ended responses. These responses were transcribed from the tapes, coded and labelled accordingly. For each of these four categories emerged. These were *'grammar, vocabulary, content* and *other'* for question 5; *'note-taking, summarising, use dictionary,* and *other'* for question 7 and *'sound, word, frequency* and *'content'* for question 8. Each of these categories is related to the RS list. For example, the 'grammar' category in question 5 is related to RS 9, "question structure of sentence', etc. For the remaining seven questions (1, 2, 3, 4, 6, 7, and 10) scales were used which facilitated coding.

6.5.4 Analysing the protocols

6.5.4.1 Analysing the English protocols

The readers were asked to read silently a text about **"The Planemakers"** and, as they read, they were to stop reading whenever they reached a point marked by numbers, eg [1], [2], and so on. At these points they were to talk aloud about what they were

thinking, (about the language or the content of the text). If they faced a problem they had to mention it and, if possible, say how they were solving it.

As regarding the analyses, it was hypothesized, during the early stages of the analysis, that if the verbal responses could be coded into symbols, the resulting computer outputs would provide graphic portrayals of the groups, and if necessary, of an individual student's RS. This will enable the researcher to underscore similarities which existed among the strategies of the different groups, and afford greater distinctiveness between the strategies as used in the two languages.

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The process of categorising subjects' protocols involved the following steps.

1. Tapes of the think-aloud protocols were transcribed.

2. Each response was compared by the researcher with the text, and a description of the subject's protocol was recorded.

3. The researcher decided whether the protocol fits the definition of a strategy presented in chapter two.

4. Each strategy was given a descriptive name if it occurred at least five times. For example S33 read the text below and responded as indicated.

TEXT		PROTOCOL		STRATEGY
One or two samples are tested to prove that they are as the designer intended. Each separate part is tested, then the whole assembly - for example a complete wing- and finally the whole aeroplane.		I guessed the meaning; it is a case of checking the aeroplane.		guessing

The subject's protocol was categorised as ***guessing*** because he guessed the text bringing out all the necessary information in an acceptable manner. ***Guessing*** was

considered a strategy because it represents a way of dealing with the author's message through the process of

a - facing a problem (trying to understand the text)

b - being conscious of it (inferred from the use of words, 'I guessed')

c - solving it through a certain technique or in this case ***guessing,*** and it occurred five times. In this manner each protocol, the transcribed record of a subject's verbalisations about his ongoing behaviour, was analysed to infer what operations he performed. According to Newell and Simon (1972:191)

> If the subject employs definite processes, [..] there may occur enough repetitions of essentially the same situations to allow us to induce what the processes are and to have some faith in their reality.

All the subjects protocols were transcribed in this way. In order to ensure greater reliability in the coding of protocols, the researcher randomly selected the protocols of a dozen subjects and reclassified them. An average of 85% agreement with the original classification was obtained.

6.5.4.2 Analysing the Arabic protocols

The subjects were similarly asked to read a text in Arabic as they did in English. The text, titled **"Old age and the respiratory system"** was divided into ten portions [1] to [10], each consisting of a sentence or two. However, in a pilot study, (please see 5.8), it was decided, due to the fact that the subjects were finding it a problem to stop at so many marked junctures in a text, which most of them considered easier than the English text, that they would stop at only three pauses, marked originally by paragraphs. This was as follows;

Pause one: after texts [1-5],

Pause two: after texts [6-8]

Pause three: after texts [9-10]

This, however, did not mean the removal of the ten markers which were retained for coding purposes. In fact these junctures helped indirectly in guiding the responses of the readers. Although there were just three pauses in the tape-recordings, the richness of the data helped in providing ample scope to detect, at times, as many as twenty strategies in all for a single student (eg S46).

Example: S46 (after pause two)

Text: The patient should not except an increase in the temperature, as is the case with younger patients [6], because in most cases, in old age, inflammation of the lungs is not accompanied with an increase in temperature [7] or any changes in the number of white corpuscles, because immunity is low in old age [8]

Protocol:

Here there is new information for me in that bronchitis is not accompanied by an increase in the temperature in old age /and I find this paragraph difficult to understand; /when old people are affected with inflammation of the lungs there is no change in the number of white blood corpuscles, how? /How is it that there is no change? /Is it because of age? /Or is it because of immunity, /and because there is little immunity, how then temperature doesn't rise. /The paragraph is difficult./

We find that where only three strategies were expected (one per pause 6, 7 and 8), the subject is in fact doing a number of different things. She is questioning information, (3 times), monitoring comprehension (twice), questioning content (twice) and using background knowledge (once).

In places where no clear responses were provided this was interpreted as '*Monitor comprehension*', since the subject in his comprehending of the text has said so at the end of the paragraphs, which was interpreted that he/she was not facing any problem. However there were very few such cases. This approach in analysing the data from the Arabic protocols was necessary in order to make comparisons with the English protocols possible, easier and more valid. By statistically equating total strategy use, it was possible to determine the relative importance of the use of each RS for each group.

The Arabic text and the responses of the subjects were translated and the protocols transcribed and coded in this manner. However, the type of strategies used in the Arabic protocols are fewer in number than those used in the English protocols as well as the observations. Again each one has been used at least five times.

6.5.5 Analysing the cloze task and the recall tasks

6.5.5.1 Analysing the cloze task

In this study, as stated earlier in the previous chapter, the cloze test was used for two purposes, viz

1. as a comparative measure among the two sets of subjects (see introduction)
2. as a check on the reader's adequacy in so far as linguistic and psycholinguistic features of the text are concerned. The cloze test was followed by a set of six questions that required the subjects to give reasons for some responses randomly selected.

A cloze test can be scored either by using the exact word method or by the appropriate word method. With the exact word method the testee gets a point only if he/she uses the word used by the author in the original text. In the appropriate word method, the general guideline is to count any word that fully fits the total surrounding as correct. Research has proved that both these methods produce highly correlated measure

> Usually the correlations are in the 0.9 and up range and this holds for non-native speakers of the language in question
>
> (Oller 1979:367)

In marking the cloze test in this study, the exact word method was preferred. Although this method, as Oller (1979) observes, is *"too stringent a requirement"*, (p.367) it was considered necessary in order to avoid any subjectivity in marking, that

is fluctuations and other problems connected with marker subjectivity. All marking could, therefore, be done by one person.

6.5.5.2 Analysing the recall tasks

Two different criteria of scoring recall tasks can be employed - a loose and a strict criterion (Carrell (1983:189). In the loose criterion, distortions are allowed , cases in which most or part of the meaning was correctly recalled or paraphrased, but which include some distortions of the original meaning. In the strict criterion, distortions are not allowed, although paraphrases are. The recall data reported in this study are limited to the strict criterion.

In scoring the recall protocols for number of ideas recalled, no attempt was made to distinguish types of idea units recalled, eg beginning versus endings, major versus minor ideas. Thus if one were to consider categories or hierarchies of the idea units recalled, one might find additional differences between the groups beyond those reported in this study. The following standard procedure was used to score the recall answers.

1. Idea units were designated a priori.
2. Each passage was analysed into eight idea units (see Appendix B3 and B4).
3. The recall answers were then scored consistently by the researcher against the a priori list of idea units.
4. Paraphrases were allowed.

Results for each of the following dependent variables was obtained:

1. The subjects' ratings of the passage on a 4 point scale (one = very difficult, 4 = very easy)

2. The percentage of idea units recalled out of the maximum eight for each text

6.6 Summary

In this chapter I explained how I have analysed the different components of the design. The five component provide information of various types. For example the cloze test and the two recall tasks have dual functions, that of measuring reading comprehension and recall (together with the teacher assessment) as well as either strategy use or use of background components. The questionnaire and the interview provide information regarding strategy knowledge, theoretical orientations and learner/reader variables. The protocols and the observation sessions reveal the actual use of the strategies in the these three modes.

CHAPTER SEVEN

The Findings of the Empirical Research

7.1 Introduction

In the previous chapter I simply presented the way I tackled my data as far as analysing is concerned. In this chapter I provide a statement of the results with regard to the categories listed below. I also provide brief, immediate commentaries on the results, where necessary. This will then lead to a more detailed discussion and interpretation of results with reference to the theoretical approaches outlined in chapters two, three and four. The categories are:

(a) The language experience and reading profiles (including affective factors and reading concepts) as covered by the questionnaires and the interviews.

(b) Subjects' strategy knowledge as assessed by questionnaires, interviews and self-observations`

(c) Subjects' strategy use as inferred from the protocols and the classroom observations

(d) Other factors affecting the reading process as covered by the recall tasks and the cloze test.

(e) Use of RS and recall of ideas among individuals.

These different categories of the data are presented in a two-layered analysis discussed in chapters five and six. The first part of this chapter deals mainly with statistical data and in the later sections (starting from 7.5) the qualitative nature of strategy use is highlighted. To do this I, also elaborate and explain where necessary.

7.2 Language experience and reading profile of the subjects

I had no easy answer to the problem of identifying the precise role of affective factors in the SL reading process. What I could do was to consider some questions for discovering the learners' point of view. In the following sections, I describe their

responses which give a picture of the way learners in this study perceive their own language and reading experience, and the way they perceive their abilities.

7.2.1 Common features of the two groups

a. Linguistic background

The BS and the BA groups are both made up of equal number of subjects from the first and second years of their specialisations. The mother tongue of 97% is Arabic. Of the remaining three, two are Urdu speakers and the third one is a native speaker of English. Arabic is spoken by all subjects at home as well as at college and, as a subject, it is a compulsory college/university requirement for all the I year students

b. Language and reading proficiency

No marked difference is observed in the subjects' rating of their overall English language proficiency or their assessment of their reading (see Tables 7.2.1.1, and 7.2.1.2).

Table 7.2.1.1

How do you rate your overall standard in English as compared with the proficiency of the other students in your class?

	very good	good	average	poor
BS	4%	45%	43%	8%
BA	14%	59%	27%	0%

Table 7.2.1.2

Generally speaking, how do you consider yourself as a reader in English?

	very good	good	average	poor
BS	0%	41%	59%	0%
BA	7%	50%	43%	0%

Over 80% consider themselves either good or average. This observation is confirmed by their average results from the cloze test, the recall tasks and the combined teacher assessment (total mean of the groups fall between 56.89% and 63.42%, the categories coming under 'satisfactory' and 'good' in the University grades).

Table 7.2.1.3

Subjects' overall reading comprehension measures

TA=teacher assessment, CT=cloze test, RC=recall task

Groups	TA	CT	RC1	RC2	Total Mean	SD
B1S	77.12	45.20	58.80	45.77	56.89	9.3
B2S	77.60	56.80	66.8	51.87	63.42	9.3
B1A	70.32	46.80	67.37	50.45	58.64	10.0
B2A	60.64	53.20	68.25	47.10	57.44	9.9

A one-way analysis of variance (ANOVA) of the means of the four groups was undertaken in order to check the variability of the subjects knowledge of English. The comparison supported the equivalence of the groups on the comprehension as a whole. In other words, groups did not differ in overall comprehension scores ($F= 0.2028$; $df= 99$; $p<.6535$). Thus the ANOVA confirms the subjects' assessment of their overall knowledge of English as well as reading proficiency.

c. Reading time and place

Reading is a popular skill with the majority of the subjects in both groups (Table 7.2.1.4) and they spent almost equal amount of time in reading Arabic (Table 7.2.1.5). They prefer reading at night (52%) and at home (88%).

Table 7.2.1.4

Do you like reading in general?

	BS	BA
1. a lot	40%	44%
2. average	36%	44%
3. little	16%	10%
4. very little	8%	2%

Table 7.2.1.5

How much do you read in Arabic everyday?

	BS	BA
1. 2 hours	20%	20%
2. 1 hour	36%	42%
3. half an hour	22%	26%
4. less	2%	12%

d. Reading material

In Arabic the subjects, as expected, mainly read newspapers and magazines whereas in English its mainly textbooks (see Table 7.2.1.6). For both groups the course demands reading of books in the L2. However, it is worth mentioning that the non-reading of newspapers and magazines is only partly due to the desire or inclination on the part of the students. There are hardly any local newspapers or magazines available in English for reading and, therefore, even with the best of intentions, one should not expect the learners to read anything rather than their study books in English. The college and departmental libraries do provide a selection of books for pleasure reading which is more sought by the BA students than the BS group.

Table 7.2.1.6

What do you mainly read in Arabic/English?

	Arabic		English	
	BS	BA	BS	BA
1. textbooks	6%	13%	94%	88%
2. newspapers	66%	45%	2%	8%
3. magazines	15%	40%	0	0
4. other	13%	2%	0	0

e. Arabic reading proficiency

Yet another common feature between the groups can be detected in the assessment of their reading in Arabic as well. Both groups think that they are 'good' to 'very good' readers in Arabic.

Table 7.2.1.7

Generally speaking, how do you consider yourself as a reader in Arabic?

	BS	BA
1. very good	24%	47%
2. good	70%	53%
3. average	3%	0
4. poor	3%	0

f. Final goal

Also only a very small number in each group considers 'reading' as a final goal (10% BS, and 6% BA). The majority of the subjects see the understanding or the speaking of the language as a final goal. Table 7.2.1.8

Table 7.2.1.8

What would your final goal for learning English be?

	BS	BA
1. understanding	52%	67%
2. speaking	35%	27%
3. reading	10%	6%
4. writing	3%	0

7.2.2 Differences between the two groups

a.. Period of learning English

The first difference between the two groups is shown in the period of learning English. Though the majority share the common period at this stage '8-10' years (four years at the Unity School level and four at the Secondary School level, plus the one or two years at the college), 30% of the BA have either more or less than this period as compared to the 16% from the BS group. These differences are due to either the subjects' miscalculations or to reasons such as late joining of school or shifting schools across the regions (Table 7.2.2.1)

Table 7.2.2.1

How long have you been learning English?

	BS	BA
1. 8-10 years	84%	70%
2. less	8%	24%
3. more	8%	6%

b. Attitude

The attitudes as measured by the questionnaire shows that the BA group reflects a more positive attitude towards the learning of English. Over 80% think that it is 'very

important' for them to become proficient in the language as against the 48% of the BS group.

Table 7.2.2.2

How important is it for you to become proficient in the language?

	BS	BA
1. very	48%	80%
2. quite	34%	18%
3. not so	10%	0
4. not at all	2%	0
Not attempted	6%	2%

Positive attitude is synonymous with increased motivation. It is the persistence shown by the learners in striving for a goal (Gardner & Lambert 1972, see 2.8d) and this is reflected in the results of the motivation factor.

c. Motivation

90% of the BA students study English either because they are 'interested in the language' or because they need it for a 'career'; the BS subjects are studying English mainly for 'study' purposes (Table 7.2.2.3).

Table 7.2.2.3

Why do you want to study English?

	BS	BA
1. interested in the L	28%	48%
2. study purpose	54%	6%
3. career	10%	42%
4. travel	4%	4%
Not attempted	4%	0

The highest level of endorsement of my four reasons in the set goes to 'interested in the language' as indicative of an integrative orientation with regard to the learning of

English. The essence of an integrative orientation (Gardner & Lambert 1972, see also 2.8d) is that the learner views his/her learning goals more than just a reason for finishing college or getting a job. Identifying a learner with such a motivation, accompanied by other attitudes such as positive feeling toward English, is essentially an identification of a well-motivated learner who will possibly be a successful reader.

Agreement with any of the other three reasons is considered as indicating instrumental orientation. With such an orientation, the learner approaches the learning of a SL with the more specifically utilitarian purpose of accomplishing some goal other than learning the language (in this case finishing college or getting a job). The BA students can, therefore, be described as learners who show signs of integrative as well as instrumental orientation and therefore can be identified as better motivated than the BS students.

This is due to the goals of each Faculty. The BA students (all the 100%) are trained for a career in teaching English and hence their choice of reason. However, 48% stated that they are 'interested in the language' as against the 29% from the other group. And again it can be argued that, in fact, all the subjects do need English for their careers, either directly or indirectly.

d. Reading time and requirement

Differences in reading show up in the groups reading time as well 43% of the BS read English for '2 hours' whereas almost the same number of the BA read only for '1 hour', although 80% of the latter group think that their specialisation requires 'a lot' of reading as against the 56% of the BS group. This shows that the requirement does not necessarily mean more time spent on reading.

Table 7.2.2.4

Does your specialisation require a lot of reading?

	BS	BA
1. a lot	56%	80%
2. average	42%	20%
3. little	0	0
4. very little	2%	0

e. Reading contribution

When it comes to the contribution of reading to the learning of the language, 94% of the BA think that 'reading does help in the learning of Arabic' whereas only 53% of the same group say the same for English. The BS, on the other hand, consider the contribution of reading in the learning of English as 'average' (43%) and, far less than the BA group (64%) only, think so as far as Arabic is concerned (see Table 7.2.2.5).

Table 7.2.2.5

How much does your reading in Arabic/English help you in your learning of the language?

	Arabic		English	
	BS	BA	BS	BA
1. a lot	64%	94%	36%	53%
2. average	21%	3%	43%	27%
3. little	15%	3%	18%	20%
4. very little	0	0	4%	0

I think the reasons for this is that in English the subjects are dependent on teaching and the teacher for the learning of the language, and they, therefore, do not attribute much importance to reading (as is clear from the percentage of those who consider reading as a final goal for learning English). When it comes to Arabic the picture is different.

Arabic, the standard variety, can be learnt mainly through books and reading and, therefore, learners may rightly think that 'reading in Arabic', does help in the learning of the 'language'.

To recapitulate on the affective factors, the picture that emerges is that the BA group has a more positive attitude, is more motivated, thinks that their specialisation requires a lot of reading (spends less time than the BS, though), and believes that reading helps in the learning of English. The BS group, on the other hand, is studying English for study purposes, have a more stable period of learning English (8-10) years, and its estimation of the contribution of reading to the learning of English is just average. This can be summarised as follows:

	BS	BA
Attitude	–	+
Motivation	–	+
Reading requirement	–	+
More time spent	+	–
Reading helps	–	+
Study purpose	+	–
Stable period of learning	+	–

Perhaps I can now move on to deal with the two groups knowledge and use of RS in the various situations. However before dealing with this major section I would like to make a distinction between strategy knowledge and strategy use (Kletzien 1990) which was briefly discussed in chapter two(see 2.7).

7.3 Strategy knowledge and strategy use

Research on learner strategy is based on the assertion that strategies begin as declarative knowledge that can become proceduralised with practice and, like complex cognitive skills, proceed through the cognitive, associative and autonomous stages of learning.

At the cognitive stage, the strategy application is still based on declarative knowledge, requires processing in short-term memory, and is not performed automatically. The student may have a firm recollection of using the strategy with a specific task. However, if the strategy application has become proceduralised and the strategy use is performed automatically, the student may not become aware of using the strategy, and data collection requires specialised techniques that interrupt ongoing mental processes.

Thus through the use of questionnaires and interviews the researcher is only able to ask subjects if they do or do not use a particular strategy; some awareness on the part of the learners' about their own strategies is brought out through open-ended questions such as, 'Have you developed any special reading technique/trick? If so, mention them'. Here the learners may or may not provide useful responses. However, it is through these forms of questions that the researcher gets some insight as to what the learners know about their own strategies. This is strategy knowledge.

By strategy use I mean the actual use of particular strategies in given situations and prescribed tasks. A reader while reading a text in English may or may not, in fact, resort to a strategy s/he stated s/he used.

In other words, readers' strategy knowledge may differ from their actual use of strategies in a reading situation. There are four possible outcomes of this knowledge/use phenemonon:

1. A reader may show explicit knowledge and use of a given strategy.

2. A reader may show neither knowledge nor use of a strategy.

These situations are to be expected.

3. The reader may show explicit knowledge of a strategy, however may not use it in a given situation. This is either because research fails to capture it, even through introspective techniques, or because of a gap between the strategy definition as set by the reseacher and that perceived by the user.

4. A reader may use a strategy without showing explicit knowledge of it. In other words, a strategy may be operating at a subconscious level.(see Table below).

	Strategy use	No use
Explicit knowledge of a strategy	A. To be expected	B. Not captured by research, eg *translation*
No explicit knowledge of a strategy..	C. Functions (possibly) at subconscious level	D. To be expected

It is often the case that the broadest range of coverage for strategy use can be obtained with questionnaires and guided interviews because of the structure given to the questions, whereas the narrowest range of strategy coverage seems likely to occur with think-aloud procedures, because the data collector is constrained from using prompts for additional strategies by the nature of the approach (O'Malley and Chamot 1990). However, in certain situations and with particular sets of participants this may not be the case at all. Strategies mentioned in questionnaires and interviews may not manifest in actual tasks or the researcher may be unaware of the range of strategies available to the learners. For these reasons, in this study, the range of strategies is different in the different modes.

7.3.1 Strategy knowledge of the two groups

7.3.1.1 Strategy knowledge as shown in Questionnaires and Interviews

The strategies that were listed in the questionnaire are only 17 in number (Table 7.3.1.1.1) though appearing more than once, and in different forms (Appendix A). These are *reading word by word, pronouncing words, reading by sentences, reading by paragraphs, translating, using dictionary, comparing English with L1, guessing, seeking social assistance, rereading, making notes, summarising, questioning meaning of sentences, anticipating content, using background knowledge, using references* and *commenting on behaviour.*

Table 7.3.1.1.1

Learners' own assessment of their use of RS in %

		BS	BA
1. Read word by word		65	82
2. Pronounce words		59	86
3. Read sentence by sentence		84	82
4. Read paragraphs		76	67
5. Use translation		56	67
6. Use a dictionary		82	88
7. Compare English with L1		49	78
8. Guess		6	18
9. Ask someone		56	65
10. Reread		56	66
11. Make notes		65	46
12. Summarise		22	24
13. Question meaning of sentence		66	72
14. Anticipate content		83	78
15. Use background knowledge		71	78
16. Use reference		71	78
17. Comment on behaviour		44	50

The major differences between the use of RS as shown in the above Table is in the level of processing. The BA group uses almost all the above RS more than does the BS group except for three strategies, viz *'reading sentence by sentence'*, *'making notes'*, and *'anticipating content'*. Yet the greater differences are shown to appear at word level. The BA seem to be more word-bound than the BS group.

Of the 100 subjects 60 were interviewed. The three main points dealt with in the interview (the other questions have already been discussed, see Appendix D), are

a. asking questions about language/content, and how the method helped

b. any specific technique that the readers have developed.

c. their concepts of a good reader.

a. Asking questions about language/ content.

As far as this question goes, the BS group seems to give more importance to content than language, whereas the BA group gives equal importance to both aspects of reading.

Table 7.3.1.1.2

Do you ask yourself questions about language/content?

	BS		BA	
	language	content	language	content
1. always	34%	45%	30%	33%
2. often	21%	17%	33%	27%
3. sometimes	45%	28%	37%	37%
4. never	0	10%	0	3%

This method of asking questions, the majority in both groups agrees, helps.

Table 7.3.1.1.3

Does this method help you in understanding what you read?

	BS	BA
1. yes	86%	87%
2. no	14%	13%

It helps them in two major ways, viz grasping vocabulary and understanding the subject matter.

Table 7.3.1.1.4

How does it help?

	BS	BA
1. grammar	4%	0
2. vocabulary	46%	63%
3. content	42%	25%
4. other	8%	13%

The categories can be illustrated from their responses.

a. Vocabulary

- *It makes me use dictionary.*
- *It makes reading easier.*
- *It clarifies any difficulty.*
- *It helps me underline words, pick them up, make a summary.*

b. Content

- *It helps to know what I am reading.*
- *It helps in getting some information.*
- *It helps me to understand subject, whole meaning.*
- *It helps me to understand content.*

The subjects in both groups have similar techniques of reading, though over 30% did not seem to have any special way of dealing with a text.

Table 7.3.1.1.5

Have you developed any special reading technique?

	BS	BA
1. notes	45%	26%
2. summary	11%	5%
3. dictionary	11%	11%
4. frequency	33%	58%

These categories can again be explained by referring to their responses.

1. Note-taking

- *I write what I read.*
- *I note expressions.*

2. Summary

- *I use summary.*
- *I summarise the text.*

3. Dictionary

- *When I read a paragraph I check different words from dictionary.*
- *I stop at different words, try to find meaning in dictionary.*

4. Frequency

- *I read always.*
- *I read more and more.*

Their concept of a good reader is based mainly on this last assumption

Table 7.3.1.1.6

In your opinion what makes a good reader?

A good reader is a person who depends on	sound	word	content	frequency
BS	27%	7%	23%	43%
BA	33%	14%	20%	33%

Perhaps the four categories can again be explained by giving examples from the subjects' responses.

1. Sound-centred

- *A good reader is a person who reads/listens.*
- *A good reader is a person who reads carefully, loudly*
- *and without mistakes.*

2. Word-centred

- *A good reader is a person who has a very good vocabulary to help him.*
- *A good reader is a person who can understand most words.*

3. Content-centred

- *A good reader is a person who reads to understand information.*

- *A good reader is a person who can understand the content.*

4. Frequency-minded

- *A good reader is a person who reads always.*
- *A good reader is a person who practices reading*

The foregoing discussion and examples reveal readers of three types. Type 1 (27% BS and 33% BA) are those who are sound-word-centred; they ask questions about words and, therefore, use dictionaries/books to check vocabulary/pronunciation. Type 2 (23% BS and 20% BA) are content-centred, ask questions about content/subject matter and depend on summaries and note-taking while Type 3, the frequency-minded readers (43% BS and 33% BA), ask general questions and depend on lots of reading and reading practice. The first type has been reported in literature as word or sound-centred while type 2 and 3 both come under the 'meaning-centred' classification (Devine 1988).

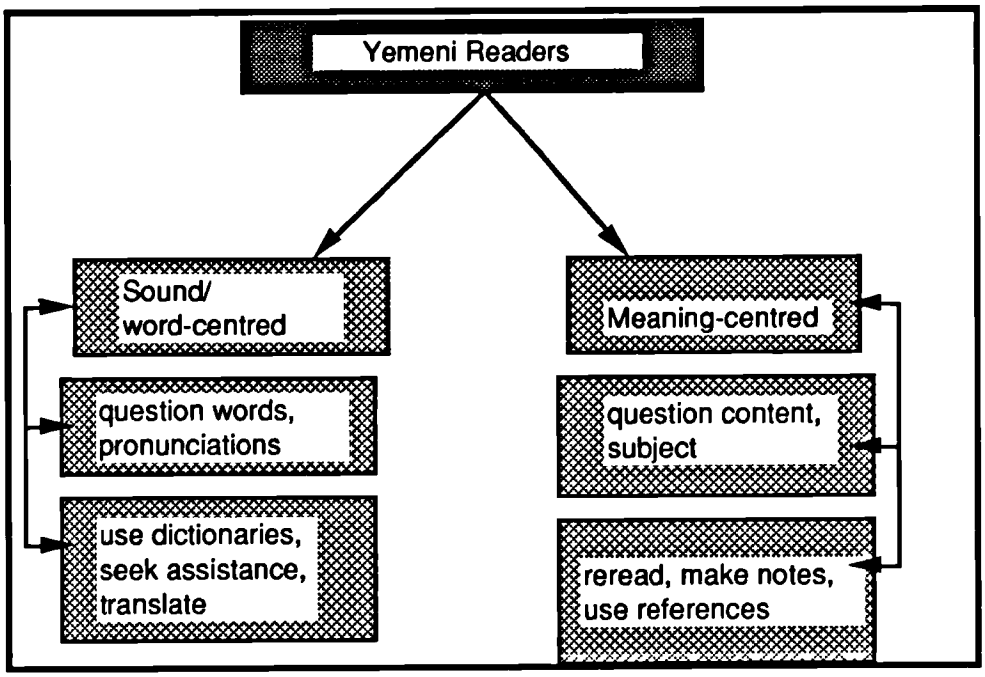
According to Devine (ibid), readers of the first type typically believe that the written language should be broken down and approached on the level of sound/word. Once these have been correctly identified, the reader may then connect them to the information in the text. Devine's 'meaning-centred readers are not very different to the subjects in this study. For example, the meaning-centred reader in Devine's study also believed that

> I guess I would like to read more.[...] the more you read the better you get
>
> (Devine 1988:132)

This is similar to the responses from my students. Readers possessing this theoretical orientation regard ability to understand the meaning of the text as a measure of success in reading. They don't usually use dictionaries, but use notes and summaries (see Figure 7.4.1.7).

Figure 7.A

Theoretical orientations of the Yemeni readers as shown in the questionnaires and interviews.



7.3.1.2 Strategy knowledge and use in the classroom

To ask students on their reading habits and to confirm what was stated in the questionnaires and the interviews, the classroom sessions provided an insight of a different nature. Here the subjects were not doing any specific reading tasks for the sake of research and, therefore, those constraints that go side by side with most experiments were not there.

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Most of the reading habits are acquired here in the classroom, through the methodology, the guidelines, the demands of the reading tasks and, of course, the reading material itself.

There were two purposes for the classroom observations, as already indicated earlier when I described the two sheets. As explained earlier, Sheet A was used to record the use of RS in a classroom situation. For this purpose I observed eight classroom sessions, two for each group. These sessions were not done especially for research

purposes but were selected (on the basis of time availability and other arrangements between the researcher and the teachers) from the ongoing syllabus-based classroom where weekly classes for similar lessons are held. They should be considered as illustrative and illuminative, and supplementary to the the statistical data obtained from the students' self-observation sheets.

Below I present an overview of the eight sessions I observed. At the end of each session I give the percentage of subject participation as well as the type of interaction that was going on in each session (see Tables below). Subject participation was measured by counting the overt participation of the 15 subjects in each group. For example, in the first session for the B1S, five subjects participated actively in interaction. This was calculated as follows: (5/15 X 100=33%).

Class: B1S **Session: One** **Time: 90 min** **Prescribed Book:** None. **Lesson:** Process Description / Electrical Bell. **Aim:** Introducing language used to describe process using the active/passive voice through pictorial and written material. **Date:** 27 April 1991	
Procedures	1. T draws diagram and writes lesson on BB 2. STs draw diagram and write lesson from the BB 3. STs read the diagram and the different steps in the mechanism 4. STs work in groups, writing paragraphs using conjunctions
Focus on:	Content and structure
Interaction:	Response type
Subject participation	33%

Class: B1S **Session:** Two **Time:** 90 min **Prescribed Book:** No **Lesson:** Process Description / A Large Engineering Project **Aim:** To practice the selection and use of phrases first presented in the unit **Date:** 4 May 1991	
Procedures	1. T writes lesson and draws on BB 2. STs write lesson and draw diagram from the BB 3. Selected reading of the lesson by STs. 4. STs work in groups on an exercise in structure.
Focus on:	Content in general
Interaction:	Response type
Subject participation	13%

Class: B2S **Session:** One **Time:** 90 min **Prescribed Book:** Interface **Lesson:** Electricity Distribution **Aim:** Not specified **Date:** 27 April 1991	
Procedures	1. T reads and explains a diagram on distribution of electricity. 2. STs work with the T on 'gathering information' exercises. 3. STs work on exercises answering questions orally and in writing. 4. STs read expressions using singular/plural forms.
Focus on:	Structure, pronunciation.
Interaction:	Response type
Subject participation	46%

Class: B2S **Session:** Two **Time:** 90 min **Prescribed Book:** Interface **Lesson:** Light Industry, Heavy Industry. **Aim:** Not specified. **Date:** 11 May 1991	
Procedures	1. T reads questions for discussion. 2. STs fail to respond to these questions. 3. T reads explanation of light and heavy industry, asking for information now and then. 4. STs work on past participles and passives. 5. STs read the answers to these exercises aloud.
Focus on:	Content in general and structure
Interaction:	Response type
Subject participation	73%

Class: B1A **Session:** One **Time:** 90 min **Prescribed Book:** Strategies for Reading. **Lesson:** A game in Chicago. **Aim:** Not specified. **Date:** 23 April 1991	
Procedures	1. Revision of previous lesson. 2. Questions from the text. 3. STs read questions. 4. STs answer the questions in short in writing. 5. T checks answers with STs. 6. STs practise the game in groups.
Focus on:	Content in general.
Interaction:	Response type
Subject participation	67%

Class: B1A **Session:** Two **Time:** 90 min **Prescribed Book:** Strategies for Reading. **Lesson:** Predicting. **Aim:** Not specified. **Date:** 21 May 1991	
Procedures	1. Introducing the title 'predicting'. 2. STs work on the words in the greeting cards A-D. 3. T writes answers on BB. 4. STs read the cards aloud. 5. Silent reading. 6. STs work on clues and language cards in pairs. 7. Class discusses orally extract on following page
Focus on:	Meaning, structure, content, print.
Interaction:	Response type
Subject participation	73%

Class: B2A **Session:** One **Time:** 90 min **Prescribed Book:** Study Skills for Reading **Lesson:** Changing Face of Australia. **Aim:** Not specified **Date:** 20 April 1991	
Procedures	1. T provides information about Australia. 2. T reads and explains the lesson in parts. 3. Selected individual reading. 4. Discussion of words, phrases and passage in general.
Focus on:	Content, meaning, summary.
Interaction:	Response type
Subject participation	60%

Class: B2A **Session:** Two **Time:** 90 min **Prescribed Book:** Study Skills for Reading. **Lesson:** Manwatching/Laughter **Aim:** Not specified. **Date:** 18 May 1991	
Procedures	1. Silent reading (STs use dictionaries or talk to each other as they read). 2. T reads the introduction. 3. T reads text in parts. 4. A few reading by individual STs.
Focus on:	Content, meaning, pronunciation.
Interaction:	Response type
Subject participation	46%

My findings regarding the first purpose have proved quite unproductive since, as is evident from the sessions described above, there was very little to observe as far as the readers were concerned. My findings are, however, consistent with studies on LS reported by Rubin (1981). Rubin, who used a variety of procedures to identify LS, including observations, videotapes of classrooms, and observations of tutorial situations, reported that the observations were not productive since the teachers focused on getting correct answers and not on the process by which students derived the answers. They are also consistent with research reported by Cohen & Aphek (1981), in which observations in language classrooms failed to reveal useful information about strategies or about patterns of communication, such as success and error corrections, which would signal that a strategy was being used.

I think part of the problem in conducting these observations is that students do not talk a great deal in the class except when directed or orchestrated by the teacher. Moreover, recent studies have revealed (eg O'Malley et al 1985) that many behaviours included on

lists of hypothetical strategic behaviour may not be observed with great frequency in actual classrooms, even if one could make reliable judgments as to the units and categories of analysis.

The immediate access to the learners 'problems and solutions, as captured by Sheet B (see Appendix C3), provides some illuminating information though. Out of the 24 listed for all modes, 18 RS manifested themselves in the students' observation sheets. '*Question meaning of word*' as expected, and already illustrated through the other instruments, again proved the most popular one. 86% of the BS and 100% of the BA students stated their problems with words, not only in the 'Words and Phrases' section, but also in the 'Title' and 'Questions' sections. This indicates the preoccupation of the learners with words. How did they solve this major problem?

The BS group *seek social assistance* from peers and teachers (50%), *use background knowledge* (47%), *use dictionary* (43%), *reread* (43%), *use references* (18%) or *guess* (17%). The BA group too rely on these same strategies, the difference being in the number of subjects employing a particular strategy. For example, only 43% of the BS uses dictionaries as against 94% of the BA group (see Table below).

Table 7.3.1.2.1

Order of Frequency of the Use of RS in the Classroom Situation

BS			BA	
Strategy Type	Freq. in %		Strategy Type	Freq in %
1. Question word	86		1. Question word	100
2. Question content	63		2. Use dictionary	94
3. Question pronunciation	57		3. Question pronunciation	90
4 Seek assistance	50		4 Question content	90
5. Monitor comprehension	47		5. Seek assistance	84
6. Use b. knowledge	47		6 Question information	81
7. Reread	43		7. Question phrase	74

8. Use dictionary	43		8. Reread	68
9. Question structure	37		9. Use b. knowledge	58
10. Question information	37		10. Monitor comprehension	52
11. Question phrase	23		11. Question paragraph	42
12. Use references	18		12. React to text	39
13 Guess	17		13. Recognise text structure	37
14. React to text	13		14. Guess	29
15. Question paragraph	13		15. Infer meaning	23
16. Recognise text structure	13		16. Use references	23
17. Question sentence	10		17. Question structure	16
18. Infer meaning	7		18. Question sentence	10

If we look at the first 10 RS on the list for both groups, we find that the problem identifying RS are as many as five, one monitoring comprehension and only four problem-solving ones. Two of these last group are overt RS and two covert (see 6.2)

The most interesting and productive section in the self-observation sheet was the one on questions.

Kindly write down as many questions as come to your mind as you go through this reading lesson, in relation to the passage?

Although most subjects wrote down one to two questions, the self-questioning aspect proved productive. The questions related to the lesson as well as other aspects of immediate interest to the readers.

Examples from B1S

I want to know more about the way the battery provide the circuit with electrons?
How we choose the suitable conjunction?
First the meaning of the title exactly?

Examples from B2S

Why industry and hospital need high voltage?
What is the reason for erecting many intermediate substances though they gave the same output.

Examples from B1A

All the text is about patients , why is not about the case?

Why the author chose this text?

What is the relation between the operations and the poem and cards

Examples from B2A

What is the purpose and aim of such an article about Australia?

I can't understand paragraph 10?

How the author classified only 12 points?

Some concern regarding the content and information is revealed here. Subjects also commented on the types of texts and lesson-aims, among other things.

Up to this stage I have concentrated on strategy knowledge, as elicited through questionnaires, interviews and observations. I now move on to describe the actual use of these strategies by the two groups.

7.3.2 Range and types of strategies as used by the groups

The RS that manifest themselves in the Yemeni students reading have been investigated using a variety types of texts. For example, the English text was on *planemakers*, the Arabic text was on *old age and physical problems*, the cloze text on *boxing*, one recall tasks on *water circulation* and the other an extract from a story. While the verbal protocols provided most of the data for actual strategy use, the cloze and recall tasks will be used as supportive evidence for factors affecting the reading process.

7.3.2.1 General strategy use in English

The frequency of use as regards the English text is presented in Table 7.3..2.1.1. If we consider the first ten RS on the frequency list (interestingly the tenth RS for both groups reaches a 23% of frequency), the pattern looks highly similar. In fact the first four for both groups show very strong similarity, even in the ranks of use.

Table 7.3.2.1.1

Order of Frequency of the use of RS in English Protocols in %

BS			BA	
Strategy Type	Freq. in %		Strategy Type	Freq in %
1. Question word	87		1. Question word	90
2. Monitor comprehension	83		2. Monitor comprehension	83
3. Question content	67		3. Question content	50
4. Question phrase	43		4. Question phrase	37
5. Question sentence	30		5 Summarise	37
6 Question paragraph	30		6. Get main idea	37
7. Summarise	27		7. Use b. knowledge	30
8. Get main idea	27		8. Question pronunciation	28
9. Integrate	27		9. Paraphrase	27
10. Paraphrase	23		10. Interpret	23
11. Use b. k. knowledge	23		11. Infer	23
12. React to text	23		12. React to text	20
13. Infer	20		13. Question sentence	17
14. Interpret	20		14. Question paragraph	17
15. Question information	20		15. Integrate	17
16. Question pronunciation	17		16. Guess	13
17. Question structure	17		17. Question structure	10
18 Comment on behaviour	17		18. Question information	10
19. Guess	13		19. Comment on behaviour	0

Again the most popular is the *question meaning of word* strategy. Whereas both groups depend highly on *questioning meaning of word, monitoring comprehension, questioning meaning of content,* and *questioning meaning of phrase,* they tend to solve their problems through *summarising, paraphrasing,* or *getting main idea.* Where they

differ is that the BA employs *use background knowledge and association* as well as *interpretation* as problem-solving strategies. The BS seems to be still struggling with *questioning meaning of sentence, of paragraph,* or *integrating.*

Although all subjects indicated knowledge of a fairly wide variety of RS, the pattern of strategy use in their verbal reports indicated that they relied heavily on only a few of these for their reading in English. The overwhelming choice of RS for both groups as seen in table indicates levels of awareness of different types (Wade et al 1990)

1. awareness of failure to comprehend or concentrate (questioning of all types)
2. awareness of when the information is coming in easily (monitoring)
3. awareness of characteristics of the text (content and information)
4. any verbalised intuition that shows awareness of the use or selection of a study method; the reason they take a particular action (using *summary, paraphrase,* and *get main idea)*

This tendency to rely on only a few of the many possible strategies has been reported before by Alvermann and Ratekin (1982) and by Bednar (1987). It seems that readers repeatedly utilise strategies that they feel comfortable with, and do not spontaneously try other that they may know and that may be more effective.

Another dimension to the use of RS in reading English texts is provided by the cloze text. According to their own assessment of how they filled in the blanks, subjects said that they depended mainly on the sentence.

How did you proceed in most cases?

	BS	BA
1. guess	6%	6%
2. refer to sentence	76%	67%
3. refer to paragraph	10%	21%
4. all the above	8%	6%

And again this is confirmed in the following assessment.

What guided you?

	BS	BA
1. word before	27%	21%
2. word after	12%	13%
3. sentence	51%	52%
4. paragraph	8%	12%
5. other	2%	2%

Their responses of the ten blanks were subjected to an item analysis (see Appendix B2). Subjects in both groups did better with function words than with content words. However, their failure to respond correctly to some of the items (eg 2 and 3) belies their assessment. For example, item 2 is dependent on the sentential constraint,

'You could never call boxing noble'.

Responses from both groups overlooked the word 'noble' and provided slot-fillers such as 'like', 'see(n)', 'forget', etc. Very few answers (eg 'consider') came close to the original word 'call'. The same can be said of item 3, which again proved problematic to both groups. The responses did not call for the type of response behaviour provided [some, the, them , differ from the BS and boxing, in, many, it, their, from the BA]

These selected samples throw light on the readers' own assumptions of how they go about tackling a reading task, and the actual act of processing. The reasons behind their responses in general can be summarised as follows:

1. Incomplete learning of constraints on certain linguistic forms (item 10)
2. Partial understanding of the text (item 8)
3. Failure to understand the language that follows
4. An incomplete understanding of the word as was evident from the responses provided for item 5 'pouring'. Although the words [came, gets out, coming, spills,

oozing.and drop] all have the sense of the original word, yet they all failed to act as substitutes.

Guessing and *Predicting* are two commonly tested strategies in a cloze task. *Guessing* once again proved a poor RS with both groups (see Tables above); in fact, it has proved unpopular throughout the design. *Predicting*, however, has proved to be more desired with most subjects. When required to predict the next sentence at the end of the given cloze passage, 73% of the BS and 67% of the BA came up with the right answers. One main reason for this behaviour can be that while 'guessing' is based on the linguistic environment of the word, 'predicting' depends on the understanding of the content as a whole. It also depends on the use of background knowledge. Both the *use background knowledge* and *question content* strategies are prominent in the list as far as reading in English is concerned.

7.3.2.2 General strategy use in Arabic

The subjects' L1 protocols were used for verifying whether they approached reading differently in one language than in the other. They were also used to check if they would give more information about L1 reading if the text were about a topic with which neither group was very familiar. As expected they read faster in their L1 (see chapter 6 where the problems in making them halt at the various juncture were described) and, therefore, made fewer pauses. This tendency to use fewer pauses in the L1 has been reported in earlier studies (eg Cavalcanti 1983) where subjects made far fewer pauses in Portuguese (their L1) than in English (their FL). They also displayed a flair to use fewer strategies than they did in the English text; only eleven of the 24 RS described on the list. Table 7.3.2.2.1 shows the frequency of the use of RS in Arabic

Table 7.3.2.2.1

Order of frequency of the use of RS in Arabic Protocols in %

BS			BA	
Strategy Type	Freq. in %		Strategy Type	Freq. in %
1. Monitor comprehension	100		1. Monitor comprehension	93
2. Use b. knowledge	74		2. Paraphrase	93
3. Paraphrase	52		3. Use b. knowledge	72
4. React to text	48		4. React to text	66
5. Get main idea	40		5. Recognise text structure	48
6. Question information	27		6. Summarise	41
7. Question content	27		7. Get main idea	31
8. Recognise text structure	26		8. Question information	21
9. Summarise	22		9. Interpret	21
10. Interpret	19		10. Integrate	17
11. Integrate	15		11. Question content	7

One strategy that showed itself mostly in the Arabic reading is the *recognise text structure* strategy. In their reading subjects would often distinguish between the main points and the details or discuss the purpose of information. They would often start the protocols with

- *He is trying to bring about a comparison...'*, or
- *It is talking about...' or*
- *We find that the writer is trying....'* or
- *Of course it is telling about...* or
- *The illness is explained in general...*

This kind of 'maturity' in reading is absent in the English protocols. Another interesting aspect of the L1 reading is that the only problem identifying RS used are *question content* and *question information* strategies. Problems regarding words, phrases, sentences even paragraphs and structures are very few, though not totally absent. Where they occur, (in less than five instances), they again differ from the stereotyped English word problems, example Subject 19:

- *The general meaning is clear but there are terminological problems such as the air-sacs.* (Note the use of the word 'terminological' [*mustalahat* in Arabic] which shows the level of difficulty even with words.)

One reason can be that the passage did not contain difficult words and/ or phrases. But even where the content proved a problem like with Subject 32

- *The subject is outside our specialisation,.....*

there was an attempt to bring meaning to it

...but from my general knowledge I can say that it is talking about.....

This behaviour in L1 reading which does not manifest in L2 reading suggests that in L1 the subjects have overcome the 'linguistic ceiling' (Clarke 1980). In other words, they have reached a stage of automatic processing of the syntactic and semantic patterns encountered in a text, as well as in the processing of vocabulary (Eskey & Grabe 1988).

7.4 Diversity and consistency in the use of RS across the three different modes

In order to make my references to the occurrences of the strategies in the different situations and through the various elicitation techniques (it must be remembered) I use the word 'mode'. Thus we have seen the manifestations of the 24 RS in the different modes (L1 protocols, L2 protocols and classroom). Variables such as diversity and consistency perhaps will make the picture clearer.

Diversity of RS use can be dealt with differently by different researchers, again depending on the aims and purposes of analyses. For example, in this study one possible way of dealing with this issue is to look at the individual subject's use of RS. In my analysing of the protocols I have, in fact, used two procedures of strategy marking. My scores of diversity represent the number of individual RS used by each subject over the ten instances in each of the modes. Thus for the diversity scores, I

counted each RS only once even if subjects used certain RS over and over, the scores providing a conservative measure of variation. This provided me with the frequencies as well. The consistency score, on the other hand, measured subjects' repeated use of RS. This provided me with the 'at least 5 times occurrences' for each RS. In short, diversity and consistency can be seen at two levels, viz across individuals and across modes. In this section I provide the second level only (I will return to the individual level presently)

Table 7.4.1

Mean and (sd) of the frequency of RS use across the three modes.[PE= protocol in English, PA= protocol in Arabic, O= observation, 1= BS, 2= BA]

	Strategy Type	PE1	PE2	PA1	PA2	O1	02
1	**Monitor comprehension.**	**5.4**	**4.8**	**5.0**	**3.7**	**1.5**	**1.3**
		(2.2)	**(2.3)**	**(2.4)**	**(1.3)**	**(0.9)**	**(0.5)**
2	question pronunciation	2.5	1.1	-	-	1.0	1.2
		(2.1)	(1.2)	-	-	(0.0)	(0.6)
3	question word	3.4	3.8	-	-	1.5	1.3
		(1.3)	(1.7)	-	-	(0.7)	(1.2)
4	question phrase	1.4	1.3	-	-	1.3	1.4
		(0.5)	(0.7)	-	-	(0.5)	(0.8)
5	question sentence	1.2	1.5	-	-	1.0	1.0
		(0.8)	(1.0)	-	-	(0.0)	(0.0)
6	question paragraph	1.0	1.2	-	-	1.1	1.0
		(0.0)	(0.5)	-	-	(0.0)	(0.3)
7	question structure	1.3	1.0	-	-	1.4	1.3
		(0.6)	(0.0)	-	-	(0.7)	(0 5)
8	**question content**	**1.5**	**1.6**	**1.2**	**1.0**	**1.2**	**1.3**
		(0.8)	**(1.1)**	**(0.4)**	**(0.0)**	**(0.4)**	**(0.7)**
9	**question information**	**3.0**	**1.6**	**0.0**	**0.8**	**1.3**	**1.1**
		(0.0)	**(1.1)**	**-**	**-**	**(0.5)**	**(0.3)**
10	comment on behaviour	1.6	0.0	1.0	-	-	-
		(0.8)	(1.0)	-	-	(0.0)	(0.0)
11	guess	1.0	2.0	-	-	1.0	1.2

		(0.5)	(0.7)	-	-	(0.5)	(0.8)
12	infer	2.5	1.5	-	-	1.0	1.0
		(3.0)	(0.5)	-	-	(0.0)	(0.0)
13	paraphrase	4.6	2.8	1.6	2.4	-	-
		(3.7)	(1.9)	(0.7)	(0.9)	-	-
14	summarise	3.2	2.2	1.0	1.6	-	-
		(0.8)	(1.0)	-	-	(0.0)	(0.0)
15	get main idea	1.8	2.0	1.2	1.1	-	-
		(1.3)	(1.0)	(0.4)	(0.3)	-	-
16	**use b. knowledge**	**2.5**	**2.6**	**2.1**	**2.1**	**1.1**	**1.3**
		(0.8)	**(1.0)**	**(0.0)**	**(0.0)**	**(0.0)**	**(0.0)**
17	recognise text structure	-	-	1.3	1.6	1.00	1.5
		-	-	(0.5)	(0.8)	(0.0)	(0.5)
18	reread	-	-	-	-	1.2	1.5
						(0.4)	(0.7)
19	integrate	1.0	1.0	-	1.2	-	-
		-	-	-	(0.4)	-	-
20	interpret	2.0	1.5	1.0	1.3	-	-
		(0.8)	(1.0)	-	-	(0.0)	(0.0)
21	**react to text**	**1.6**	**1.5**	**1.5**	**1.5**	**1.0**	**1.8**
		(1.1)	**(0.5)**	**(0.9)**	**(0.7)**	**(0.0)**	**(0.6)**
22	use dictionary	-	-	-	-	1.3	1.7
		-	-	-	-	(0.5)	(0.8)
23	seek assistance	-	-	-	-	1.2	1.6
		-	-	-	-	(1.2)	(1.6)
24	use references	-	-	-	-	1.0	1.0
		-	-	-	-	(0.0)	(0.0)

Note: The **highlighted** RS are common across the three modes

Of the 24 RS diversely used across the three modes, the only RS that manifest themselves consistently are five, viz *monitor comprehension, question content, use background knowledge, react to text,* and *question information.* RS that occur in both L1 and L2 reading are ten; those that occur in English reading and observations are 13.

RS common in L1 and L2		RS common in L2 (PE & O)
1 Monitor comprehension		1. Monitor comprehension
2. Question content		2. Question words
3. Question information		3. Question phrase
4. Summarise		4. Question sentence
5. Get main idea		5. Question pronunciation
6. Interpret		6. Question paragraph
7. Use background knowledge		7. Question structure
8. React to text		8. Question content
9. Integrate		9. Question information
10. Paraphrase		10. Guess
		11. Infer
		12. Use background knowledge
		13. React to text.

One more analysis was performed on the data from the three modes to determine the relationship between the use of RS in the three modes, in other words to find out if subjects tended to uses different strategies due to the situation. The Table below presents the results of the Pearson Correlation Coefficient between the groups as well as the modes

Table 7.4.2

Pearson Correlation Coefficient between RS used in different modes for the two main groups (PE=protocols in English; PA=protocols in Arabic; O=observation; 1=BS; 2=BA)

	PE1	PE2	PA1	PA2	O1	O2
PE1	1.000	**.9274****	**.4508**	.2167	**.6278***	.4856
PE2		1.000	.5782	**.3817**	.6263	.4906
PA1			1.000	**.8674****	**.3412**	.2312
PA2				1.000	-.0043	-.1007
O1					1.000	**.8259****
O2						1.000

Note: the **bold print** indicates where significant correlations were expected.

*=p<.01 **=p<.001

If we look at the correlations coefficient, as presented in the above Table, we find that for the BS group it reaches a significant level as far as the English text and observation go (r=.6278, p< .01); however, the level of significance is not high where the Arabic protocols are concerned (.4508). For the BA group there is a positive correlation between the three modes; however it does not reach any level of significance. This indicates that a strategy use is somewhat influenced by the mode in which it manifests itself.

The two groups, once again in their use of RS, come very close to each other in reading English (r= .9274 p<.001), in reading Arabic texts (r= 0.8674 p<.001), as well as in self-observations (r=.8259 p<.001).

7.5 Further classifications

7.5.1 Problem orientedness and consciousness in RS

So far I have concentrated mainly on the quantitative use of RS across the different modes and across the two groups. In the following sections I will deal with the qualitative aspect of strategy use. Numbers will, however, still appear where and when necessary.

According to the definition set in chapter 3, RS are potentially conscious plans for solving what to an individual presents itself a problem in reaching a reading goal. The assumption of what the reader feels to be a problem in his reading a text and his being conscious of it are the central notions of this definition. So there are at least two objectives in analysing RS in verbal observation data: specifying the problem the reader faces and describing the strategies he chooses.

So far I have been discussing my list of RS without directly relating them to the type of behaviours that manifest the types of RS use. To elaborate on the dichotomy that was mentioned in the previous chapter (see 6.2), I can now classify my own list of RS into problem identifying and problem solving strategies. This classification is made on the basis of two fundamentally different ways in which readers have behaved when faced with the reading task. In the classification of CS, problem avoidance is also a behaviour that can be clearly commented upon depending on the overt behaviour of the learner and a third category of strategies emerges, that is 'problem-avoidance' strategies. In reading, it is difficult to differentiate between the avoidance of a problem and the monitoring of comprehension. I have already stated in my list of RS the possible reasons for using 'monitoring comprehension'.

The criterion of **problem-orientedness** presupposes a distinction between goals which the individual experiences no difficulty in reaching and goals which present themselves to the individual as 'problems'. The word 'problem' is sometimes used in a rather vague way as a near synonym to 'task'. In reading it is used even more vaguely. This is different from the definition given by Klaus and Buhr (1976) who define 'problem' as

> recognition by an individual of the insufficiency of his existing knowledge to reach a goal and of the consequent need for expanding this knowledge'
>
> (p.974)

The 'insufficient knowledge' in the case of CS refers to the IL system. In reading it refers to the 'linguistic ceiling' which is only a part of the IL system. The goal of the strategy is the problem, and the product of the execution phase controlled by the strategy is the solution to the problem (see also chapter two).

Problem-orientedness has been used as a defining criterion by both Kellerman and Jordan in their respective descriptions of strategies. Kellerman (1977) defines a

strategy as a "well-organized approach to a problem" (p. 931), and Jordan (1977) makes the point that "strategies can only be applied when something is acknowledged as problematic" (p. 14), which points to the additional criterion of consciousness, ie if the individual experiences a problem in reaching a goal, this implies that he is conscious about there being a difficulty.

'Consciousness' is the other criterion on which the behaviour in this study is described. It, in fact at times, especially where the problem is not explicitly stated, has been considered as sufficient for a behaviour to be described as 'strategic'..

I have therefore established two situations for the occurrence of RS depending on whether the problem is in the planning phase or in the execution phase. It must be noted, however, that as for the specification of the readers' planning problems the analyst meets great methodological difficulties. Since the planning problems are not directly accessible, the analyst is dependent, in the first place, on the indication that reflects the reader's attempt at problem-solving. It must be taken for granted that only a small part of the decision-making processes show up in the textual data in a way that allows an adequate interpretation. The description of the reader's planning, if at all possible, constitutes only part of an analysis in the given sense.

In the first case, therefore, the individual experiences a problem which stops him/her from reaching the reading goal. My problem- identifying RS will therefore refer to this phase. In the second phase, the problem crops up when the individual attempts to execute the plan and the reader resorts to an achievement strategy, an attempt to overcome the problem. My problem-solving RS are related to this phase. Therefore, readers have either totally avoided the solutions of problems, exhibiting an avoidance behaviour, or they have attempted to tackle the problem directly by developing an alternative plan of action. The actual data, in fact, revealed the following types of behaviour:

1. monitoring the reading task where the reader, because he/she has been asked to say whether he/she was facing a problem, usually came up with expressions such as *'It is clear'; 'No problem';* or *'I understand what means by these sentence but.' etc.*
2. problem identification followed by no solution where the reader would say *'The meaning of absolutely', 'I think it is very technic and it needs some explanation'*, etc.
3. problem identification followed by problem solution as when the reader tries to solve the problem as in *'Consequently is a word that I don't know but I think this talks about'*, etc.
4. problem solution only with no clear indication of it in the first place as when the reader tries to get the main idea, summarise or paraphrase.

All these instances have been counted as 'strategic' and the behaviours as the different uses of RS. The first three are clear in the data as far as problems are concerned. For the fourth one I am dependent on the 'conscious' effort made on the part of the reader to reach the reading goal.

Hosenfeld (1977) states that a RS can be viewed as comprising of two categories of operations - one category includes the student's assigning meaning to sentence in a relatively uninterrupted manner. The second category includes readers' operations when s/he comes to an unknown word or phrase, that is, what s/he does when his/her 'main meaning' line is interrupted. From an analyst's point of view it is, therefore, worth looking at those operations as well where there is no interruption.

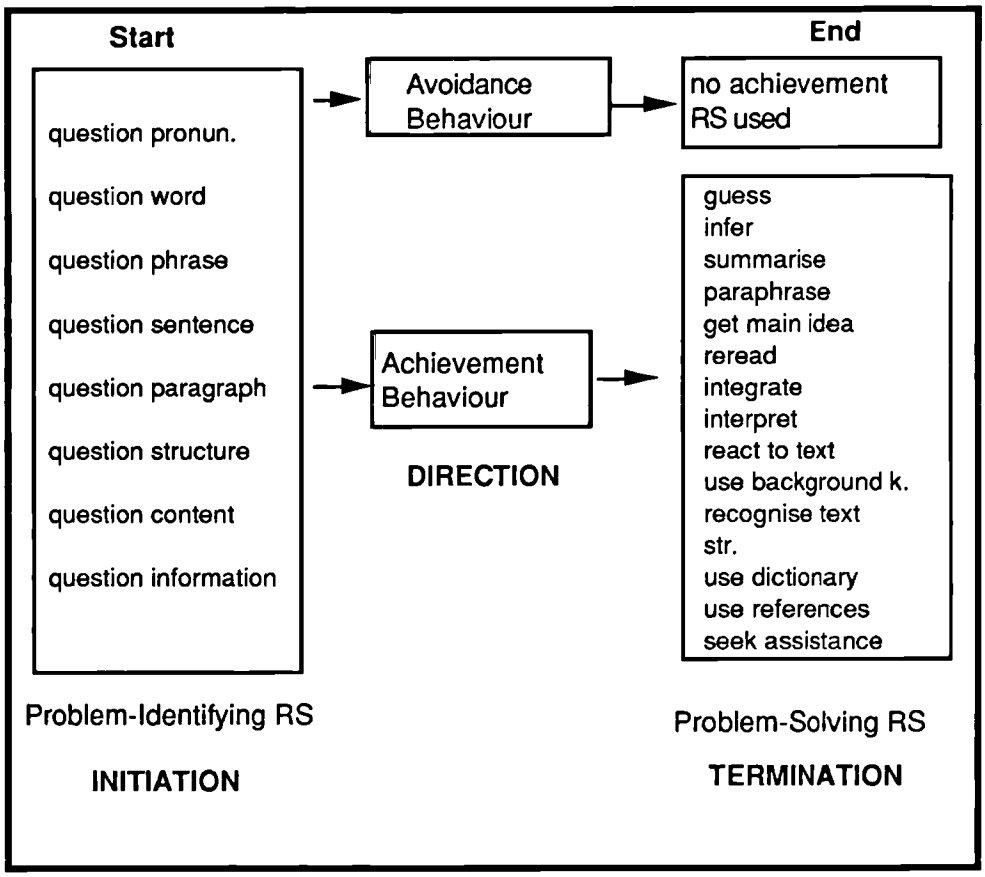
Therefore on the basis of the foregoing discussion all the attempts at reading, whether directly mentioning the immediate problem or implying the presence of one, have been described as 'problem solving' or achievement strategies (Faerch & Kasper 1983b).

It is hardly surprising that the choice of RS is not only sensitive to the underlying behaviour (non-achievement/achievement) but also to the nature of the problem to be

solved as well as the situation. If I now put together what I have said so far about types of problems, types of behaviour, types of RS, I can obtain the following figure (7.B) which will serve as a basis for my description of individual RS and which illustrates the start and end of a reading behaviour which can be divided into initiation, direction and termination.

Figure 7.B

The beginning and end of a reading behaviour.

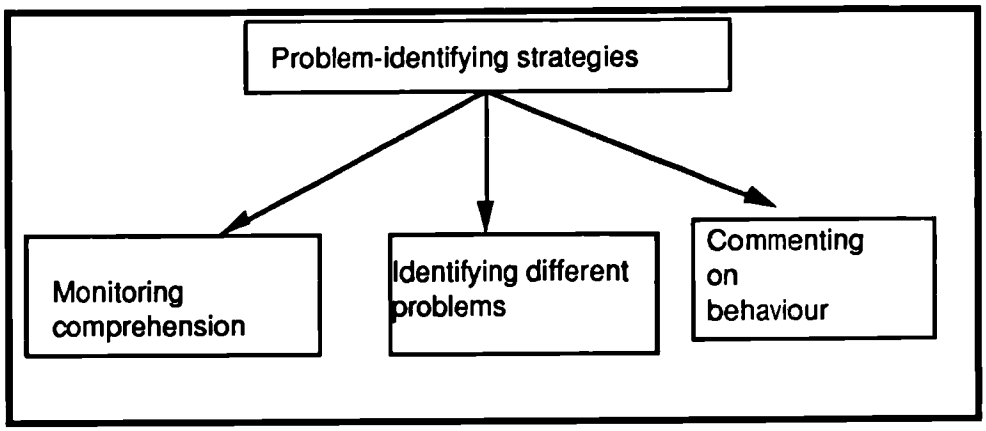


7.6 Problem Identifying (PI) strategies in reading

This class of RS is made up of monitoring comprehension, identifying different problems and commenting on behaviour.

Figure 7 C

Problem-identifying strategies in reading.



7.6.1 Monitoring comprehension in reading

'Monitoring' is rather a vague word. Its meaning depends entirely on the model of SLL it appears in.

'Monitoring' in Anderson's (1983) view is a response to ambiguity in comprehending language where an individual selects a best guess of the message's meaning based on available information. Inferencing skills are clearly involved in the way that Anderson uses the term monitoring. It is also involved in control process and in opportunistic planning, because a learner will analyse task demands to determine the task difficulty and the appropriacy of using top-down or bottom-up processing. Monitoring as described by Anderson is certainly incomplete.

The issue that needs to be addressed more explicitly in a theory concerned with comprehension processes is the cues to which individuals attend that assist learning. Markman (1981) has identified internal monitoring in signals, such as perceived absence of structure and perception of inconsistencies, that learners can use in detecting failure to comprehend verbal materials.

Krashen's (1981) notion of monitoring is again too narrow. The fundamental claim of the Monitor Theory is that conscious learning is available to the performer only as a 'Monitor' (1988:22). The Monitor acts as a sort of editor that is consciously controlled and that makes changes in the form of utterances produced by acquisition. There are three conditions for its use, viz time (of which even Krashen, himself, seems unsure) to think about and use conscious rules effectively, form so that the utterances s/he produces are correct, and linguistic rule, an impossible requirement. *But the most interesting thing of Krashen's argument is that learning is available only for use in production, not in comprehension* (McLaughlin 1987:24).

> Monitor users show an overt concern with 'correct ' language and regard their unmonitored speech or writing as 'careless'.
>
> (Krashen 1988:13)

Nisbet and Shucksmith (1986) suggest that monitoring is the key process that distinguishes good learners from poor learners. In their view, monitoring is the ability to analyse the demands of the task and to respond appropriately, that is, to recognise and manage learning situations. Monitoring can thus be described in Nisbet and Shucksmith's (1986) terms as being aware of what one is doing, or bringing one's mental processes under conscious scrutiny and thus more effectively under control. Weinstein and Meyer (1986) add that monitoring involves setting goals for learning and deploying alternative procedures when the goal is not met.

Using *comprehension monitoring* in this study subjects were able to check or verify their understanding of the text. In some cases it can be argued that it functions as an avoidance strategy, the reader trying to escape from further involvement with the text by simply declaring *'It is clear'*. In CS, avoidance is considered a non-achievement strategy and obviously applies with different degrees of appropriacy to the different contexts discussed:

> It is most appropriate for the teacher, who knows what he is avoiding, and least appropriate for the translator, where avoidance is

> created by lexical voids in the target language. As for learners, some are in the position of the teacher and some in the position of translators, depending on the extent of the knowledge of the target language.
>
> (Blum-Kulka & Lavenston 1983:123)

The avoidance strategy, however, as applied to reading and because the reader's 'all clear' strategy is not immediately tested, can be interpreted as an escape from a problem rather than acknowledging it or trying to solve it. In fact, avoidance refers to 'escape routes' in Ickenroth (1975). In Palmberg (1979) it is used as an umbrella term for Topic Avoidance, Message Abandonment and Message Reduction (see also Ibrahim 1990).

It, however, becomes difficult to interpret *monitoring comprehension* as an avoidance strategy in reading because of the problems of peering into the 'black box' (Ellis 1986). It is, for example, difficult to interpret S1's "*I understand all the sentences*" as an avoidance strategy because the rest of her protocols show her real involvement with the text, whereas for S5 '*It is clear*' can be taken as an escape route, again with reference to the rest of her protocols (see Appendix I). It does seem difficult to relate these behaviours as instances of what Blum-Kulka and Levenston call 'apparent avoidance' or 'true avoidance' (1983:123)

Perhaps this behaviour can be explained through the correlations of this RS with other strategies. It is interesting to note that *monitor comprehension* is correlated with the following PI strategies:

	Question word	Question pronunciation	Comment on behaviour	**PI strategies**
Monitoring comprehension	**.3856***	.0509	.0809	**.7487****

Note: *= signif. level .01, **= signif level .001

Its relationship with PS strategies does not reach any significance, though some positive correlations are found with *guessing* (.1133), *reacting to text* (.2410), *integrating*(.0270) and *rereading* (.1339).

Readers seem to employ *monitor comprehension* and *question meaning of word* almost side by side, indicating that comprehension is so closely dependent on understanding of words.

7.6.2 Identifying problems

Using this major group of RS the subjects' were explicitly identifying the central point needing resolution in their reading task or identifying an aspect of the task that hindered its successful completion. Subjects have identified problems at very basic systemic levels such as pronunciation, word meaning, phrase, sentence as well as structure and paragraph. They have also identified their problems at the schematic levels, viz content and information. It is evident that readers' have most of their problems at basic linguistic levels. It was, therefore, necessary to keep categories such as word and phrase apart. For example, subjects would understand the word 'radio' but not 'radio navigational'; 'man' but not 'stress man'; 'ground' but not 'on the ground'.

At the higher levels problem identification is directly related to knowledge about subject matter. Using a *question content* RS the subject expressed his/her inability to understand the subject matter even when all the words were clear.

S1: *I understand all the words but I don't understand what mean by these words.*

Using the *question information* RS, for the same text, S11 (from the same group and year as S1) provides a very good example of when these two strategies seem to be working in exactly the opposite directions, in that in the former case the knowledge of content is lacking whereas in the latter it is not only there but utilised critically.

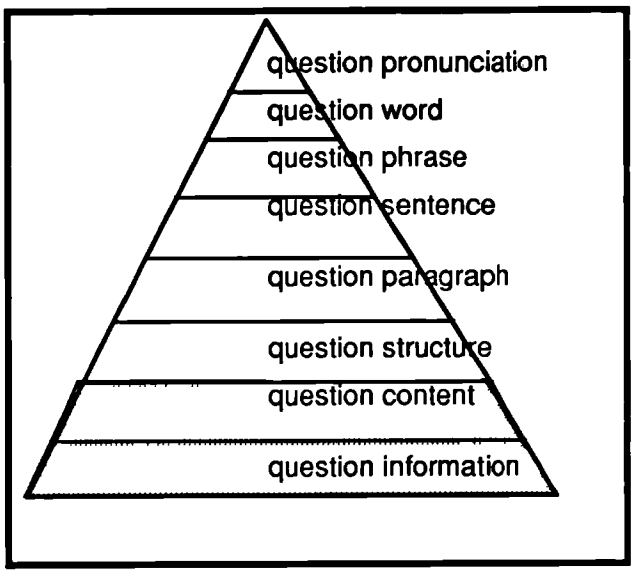
S11: *The first text is so clear but the second text I can't understand the*

purpose of it for fatigue strength.

Problem identification can be represented in a hierarchical pyramid (see 7.D), where the bottom-up notion of Clark & Clark (1977) is obvious.

Figure 7 D

Levels of problem identification



7.6.3 Commenting on behaviour

This RS complements the *monitor comprehension* RS. While with monitoring the reader checks, verifies and corrects his/her understanding, using this RS the reader is, in fact, unable to control in the sense that the behaviour or process takes place in a manner beyond his/her control. In the following examples, the two RS occur side by side

S5: *The meaning is clear. There is certain idea which is concentrated, talks about the 'stress man', if I understand this meaning I can understand the paragraph.*

S19: *The general meaning is clear but there are some terminological problems such as the 'air-sacs' and the 'inflammation of the bronchi' which is causing problems of understanding.*

It is similar to the 'self-evaluation' strategy (O Malley & Chamot 1990), where the learners review their own performance in relation to their actual production, their own ability, their strategy use, and the language repertoire at the word, phrase or concept level. Whimbey's (1975:9) characterisation of a good reader perhaps illustrates this point:

> A good reader proceeds smoothly and quickly as long as his understanding of the material is complete. But as soon as he senses that he has missed an idea, that the track has been lost, he brings smooth progress to a grinding halt.

It is yet one more instance of self-questioning to determine whether goals are being achieved.

Given that students have at least some rudimentary awareness of their own cognitive processes, and can monitor their progress sufficiently well to detect a problem if one occurs, are they also capable of introducing some remedial strategy to overcome the detected problems? The answer to this issue is provided in the second cluster, the problem-solving.

7.7 Problem-solving (PS) strategies in reading

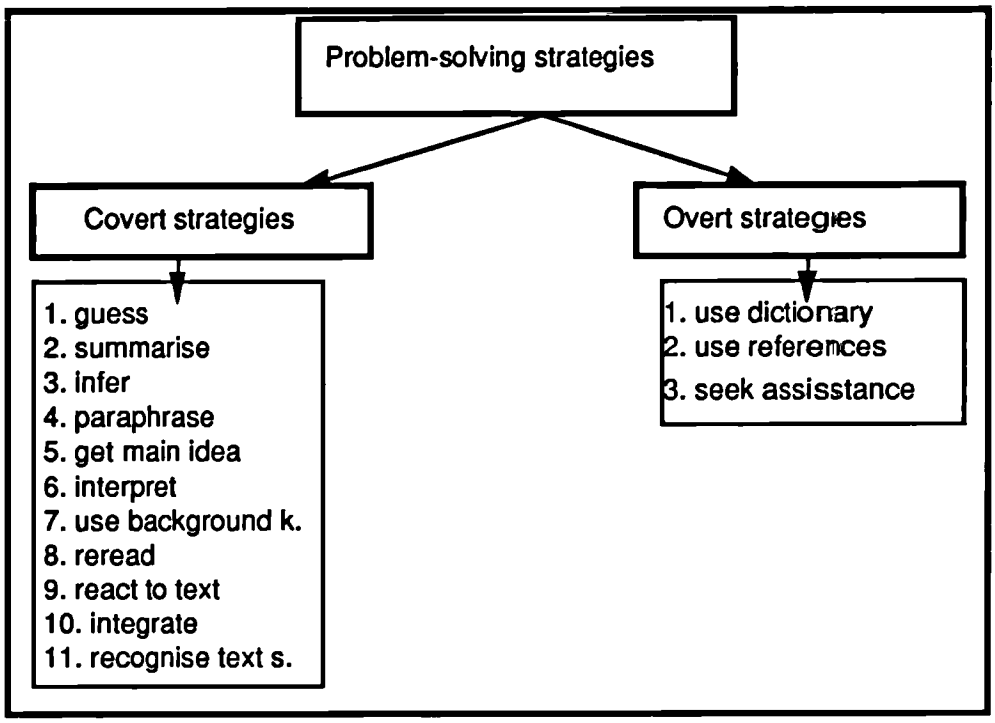
By using an achievement strategy, the reader attempts to solve problems in reading by expanding his resources in the same manner as a speaker who attempts to solve problems in communication (Corder 1983). The problems to be solved by means of these strategies may occur at all linguistic levels, not only lexical but discourse levels as well.

Problems at word level are solved mainly by using either the covert RS *guessing* and *inferencing*, or through the *use of the dictionary* or *seek assistance* strategies. I keep the discussion of the overt RS for a later stage. I start by considering the covert RS

first. In my attempt to discuss these RS I will present them in combinations that show some relationships between two or more RS.

Figure 7.E

Problem-solving strategies in reading.



7.7.1 Guessing and inferencing

The Webster (1961:1008) dictionary defines 'guessing' as

> to form a judgement or opinion of without knowledge or often without means of knowledge; to form an opinion of from insufficient, uncertain or ambiguous evidence or on grounds of probability alone.

'Inferencing' (p. 1158) is described as

> to derive by reasoning or implications, conclude from facts or premises

In practice the person might guess at the meaning without using contextual clues, which would probably lead to an incorrect inference. The central point of difference between the two words is the use of context. The two RS are kept as different in this study because of this very difference. To me a reader who bases his/her formation of meaning on guessing is a risk-taker. *Guessing* can, therefore, be described as a risk-taking behaviour where people venture about the interpretation of the text they read. In

this study *guessing* has proved a very unpopular RS. Even where the opportunity was provided to guess, the frequency of occurrence was significantly low. (see Table below).

Table 7.7.2.1

The use of Guessing

	BS	BA
2. Observation	17%	29%
3. Cloze	6%	6%
4. English protocols	13%	13%

The process of lexical inferencing involves making informed guesses as to the meaning of a word in the light of all available linguistic cues in combination with the readers' general knowledge. While in production learners use inferencing to compensate for the absence of words for which they have meanings, in comprehension, inferencing strategies are needed to compensate for the absence of meanings attached to unknown words.

Table 7.7.2.2

The use of Inferencing

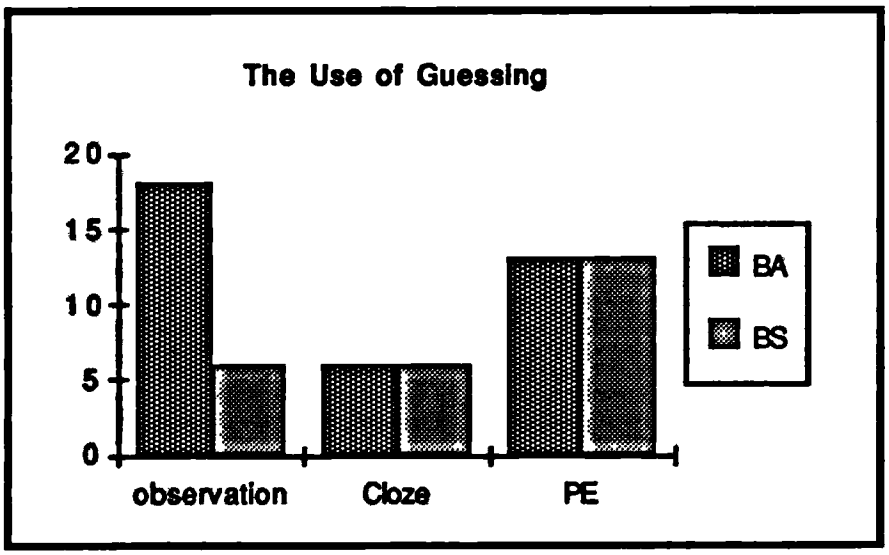
	BS	BA
1. Observation	7%	23%
2. Cloze	73%	67%
3. English protocols	20%	23%

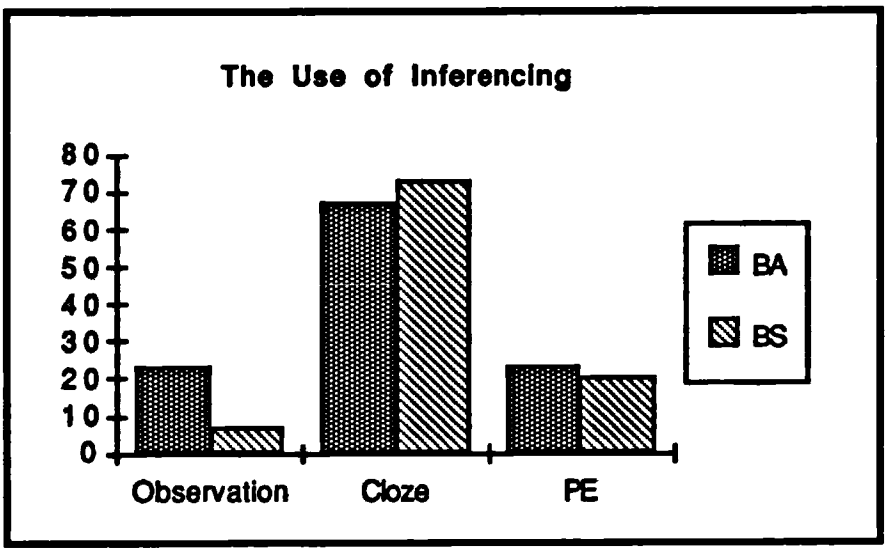
For readers who depend so much on linguistic decoding it is but natural that RS such as *inferencing* cannot feature as prominent in their use, although in the conclusive sections of the cloze, where they had to predict the next sentence of the passage, (and which depended on all the foregoing information), they did use this particular RS quite well.

The use of contextual clues plays an important role in the process of guessing and inferencing. A context clue is, essentially, a hint about the pronunciation/ or meaning of an unfamiliar word. The hint is perceived by examining the preceding and the following words or sentences. By studying the surrounding words and the relationships to the unknown word, a reader may be able to gain additional insight. Clues to words can sometimes be found within the word itself, for example:

S32: *Here there is a new word which is 'navigational' and I think it is from the word 'navigation' if I am not mistaken.*

There is no doubt that the terms 'guess' and 'infer' show a considerable amount of overlapping; however the correlation between these strategies as used in the study does not reach significance at .01 level (r=0.1263). But as Tarone (1981) notes occasional overlap between definitions may occur under special circumstances as when an individual's motivation for using a RS is not clear.





7.7.2 Paraphrase, summarise and get main idea

The reader may find a satisfactory form of comprehending a given piece of text through formal reduction or replacement. These are viable means of retaining the text in the short term memory. This proviso implies that the reader may fail to achieve his aim, producing a form which is deviant or even subject to misinterpretation. The readers' literal interpretation of a text is the 'adjusted meaning' (Varadi 1983) he prescribes to the print. The reader may find himself unable by the very means available to him at this stage to formulate his optimal meaning (ibid.) in which case it is claimed that he often adjusts his meaning so as to bring it within the sphere of his/her decoding capabilities. This adjustment of meaning usually involves sacrifice of part of the text, loss of the precision or it may lead to a complete shift of the original meaning. These processes are similar to the concept of message adjustment in CS.

In some cases the reader replaces the text, substituting the subject matter preferably as close as his/her capability allows. This manipulation in reading is termed 'paraphrase'.

Paraphrase can have the form of description, circumlocution and exemplification, the reader focusing on characteristic properties or functions. Description involves the fairly common strategy of subcategorising the broad superordinate category which the reader

faces in a text by describing it. In the following example the reader is trying to explain text 6 (see Appendix E1) through this process.

S29 : *It is about the stress man who calculates the stress which can be used for the construction of any part of the aircraft; he takes account also the unusual stress; the unusual stress can be taken as a factor of safety in case of (against) any error in the manufacture of the aircraft and the design should make the design or he must do the structure engine as the stress man calculated.*

The use of paraphrase can take the form of circumlocution as in the following example from text 1

S46 *There are two main things made in the production of the aeroplane difficult....*

(Notice the use of 'production of aeroplanes' in the place of 'aircraft engineering'.)

Paraphrase can also involve exemplification, the reader using hyponymic expressions. It may involve giving either a typical instance of the prototypical action or object, or a typical situation in which it might be found or done. Alternatively, it might involve providing a specific instance of the action or object, as in the example below:

(Arabic text 6-8)

S52 *The relations of the old people must take them regularly for consultations and medical check-ups , the symptoms of any disease may not be evident, there may be internal effects unlike children who show signs of fever and change in temperature when they are ill. With old people, due to lack of immunity the signs don't appear.*

Paraphrase is in fact a reconstructing strategy used when the reader realises that he cannot complete a local plan which he has already begun realising and develops an alternative plan which enable him/her to comprehend.

These attempts at finding a satisfactory expression to a piece of text are most relevant to the stage at which the reader has not yet resorted to any alternation in his meaning.

Moreover, it should be emphasized that the reader may very well find himself unable to decode the first adjusted meaning he selects, so that further modifications become necessary. Hence what was termed as adjusted meaning earlier may very likely turn out to be only the last in a series of modified meanings, a series characterised by progressive loss of elements. While in language production this loss reflects less competence in the TL, in reading it is an indication of his attitude towards his competence in the TL.

Therefore when resorting to reduction strategies in reading such as get main idea/summary, readers resort to the elimination of certain elements or more importantly the reduction in the range of synonymous forms.

The process whereby, under the restraining forces of his linguistic repertoire, the reader deliberately sacrifices part of the meaning he originally read is a form of reduction and in reading it is referred to as summarising.

In an actual communicative situation this phenomenon can probably be dismissed as of marginal importance. Yet, it has been found to have disturbing relevance for the classroom situation where readers are called upon to give summaries of their readings as ends in themselves, regardless of problems.

Yet another form of reduction is found when the reader simply tries to reduce his/her reading in the form of an idea. Main idea comprehension is often considered to be a single simple comprehension task. I believe that identifying the main idea is more complex than research suggests and it is affected by certain factors interacting. The reader has to see the relationships among the sub-ideas in a text and recognises the structure that ties the sentences together. A 'main idea' RS therefore usually requires reading several statements in a text and synthesizing these ideas into a single central thought. It seems reasonable to assume that text organization is a factor that affects

main idea construction. The readers in this study either showed a clear use of the strategy or explicitly stated either their success or failure to do so as the following examples clearly show.

S21: *It talks about the two types of tests that are carried out on the new manufactured aeroplanes*

S38: *I get the main meaning.*

S59: *I don't understand the main idea because.....*

What is common ground between the three strategies is the selection of form. The use of one or the other reveal an awareness on the part of the reader of the alternatives available. It is what is termed in CS studies as lexical simplification .

Lexical simplification is a feature of many diverse linguistic activities and it operates according to universal principles which derive from certain aspects of semantic competence particularly

(a) the awareness of hyponymy, antonymy and possibly other systemic relationships between lexical items by means of which we can explain why in specific contexts one lexical item can substitute for another (Richards 1976, Slobin 1974).

(b) the ability to avoid the use of a specific lexical item by means of circumlocution and paraphrase

(c) the ability to recognise a degree of paraphrastic equivalence.

The reader's need to simplify is thus explained by the complexity of the task of acquiring command of all aspects of the reading text. His ability to do so derives from his own semantic competence in his L1. As a native speaker he will at times experience a need for paraphrase and circumlocution as well as for hyponymy and synonymy. As a SL reader he is compelled to reorganise (consciously) his semantic competence. The end product of the readers' protocols' where these RS have been used are, therefore, similar to simplified reading texts (see eg Widdowson 1978). This is not to suggest

that the reader is a simplifier in L2. Has that been the case 'simplication' and not *'paraphrasing', 'summarising'* or *'getting main idea'*, would have been on my list of RS.

Table 7.7.3.1 summarises the use of the three RS in L1 and L2 and the examples that follow show the reduction of elements as one moves on from paraphrasing to getting the main idea.

Table 7.7.3.1

	BS				BA		
	para	summ	idea		para	summ	idea
English	23%	27%	27%		18%	37%	37%
Arabic	52%	22%	40%		93%	41%	31%

Table 7.7.3.2

Examples from English text 4 from the same group, B2S

Paraphrase (S24)		**Summarise (S21)**		**Get main idea (S29)**
The total weight of include weight of seats, weight of passengers, weight of radio navigational instruments; also weight of freight room.		Many factors are to be considered regarding the weight, example weight of passenger, freight and something like that.		Is about how the total weight of aircraft are divided.

The correlations between these RS are also worth considering. The positive correlations reach significance only between 'paraphrase' and 'summarise' RS.

		Paraphrase	**Summarise**	**Get main idea**
Paraphrase		1.000	.3489*	.1476

Summarise		.3489*	1.000	.2493

Note: *=signif. level .01

With the types of RS described so far the reader tries to solve problems which are of the systemic level, mostly words, phrases, sentences and paragraphs. In their endeavour to reach a solution readers resort to surface level reading strategies (Bendania 1988). I now move on to where the reader has to go beyond words and phrases.

7.7.3 Use background knowledge and recognise text structure

It is generally agreed that given reasonable facility with decoding, reading comprehension is the product of

a. The compatibility of the reader's knowledge and text content. Comprehension is influenced by the extent of overlap between the reader's prior knowledge and the content of the text (content schemata).

b. Considerate texts. Comprehension will be enhanced to the extent that the texts are well written, that is, they follow a familiar structure and their syntax, style, clarity of presentation, and coherence reach an acceptable level (formal schemata).. Such texts have been called considerate (Anderson & Ambursen 1982).

The well-practised decoding and comprehension skills of expert readers permit them to proceed relatively automatically until a triggering event alerts them to comprehension failure. While the process is flowing smoothly, construction of meaning is very rapid, but when comprehension failure is detected, readers must slow down and allot extra processing to the problem area. They must employ active RS that take time and effort (Palinscar and Brown 1984). One commonly experienced triggering event is the realisation that an expectation about the text has not been confirmed. Another triggering situation is when unfamiliar concepts are encountered too frequently for the reader to

remain tolerant of his/her ignorance. In order to solve these problems the reader employs RS such as *use background knowledge* and *recognise text structure.*

The **use background knowledge** strategy is commonly used in literature with the sense of 'elaboration' (O'Malley and Chamot 1990) or 'addition of information' (Olshavsky 1976-77). Since it involves relating new information to prior knowledge, or making meaningful personal associations to information presented, in this study this RS is known as 'use background knowledge' RS (after Block 1986.) Readers showed various degrees of inclination to rely on this strategy as the following table indicates

Table 7.7.4.1

Use of background knowledge.

MODES	BS	BA
1. Observation	47%	58%
2. English protocols	23%	30%
3. Arabic protocols	74%	72%

The use of this RS calls for the reader to be proficient at the linguistic levels as well as to have a fairly good idea of the content of what he/she is reading. In the observation sessions the content problem did not exist since every group had its own specialisation-based material. The English text which, in fact, should have been more popular with the BS group, revealed that the BA students showed more involvement with the use of prior knowledge than the BS. The Arabic text hardly brings out the difference.

Use of background knowledge is a major factor which affects comprehension. This knowledge includes facts and concepts, knowledge of how and why people convey different type of messages. Without adequate background knowledge the comprehension process may break down, or a partial or idiosyncratic interpretation of a text may occur. It is the background knowledge that allows reader to infuse the print

with meaning. Thus the use of this RS calls for reader-text interaction. The reader's prior knowledge permits interpretation of the author's intended message and leads to comprehension of the material. As the reader processes the ideas represented in the text, associations are formed which are in light of their possible integration with new ideas expressed in the text (Adams and Collins 1979). For efficient test processing and successful comprehension to take place, a link with some already acquired knowledge is necessary.

Subjects from both groups have used their prior knowledge almost identically despite different specialisations and year of study. In the following examples, particularly for text 2 the interpretations are very close.

Table 7.7.4.2

Examples from text 2 and 3

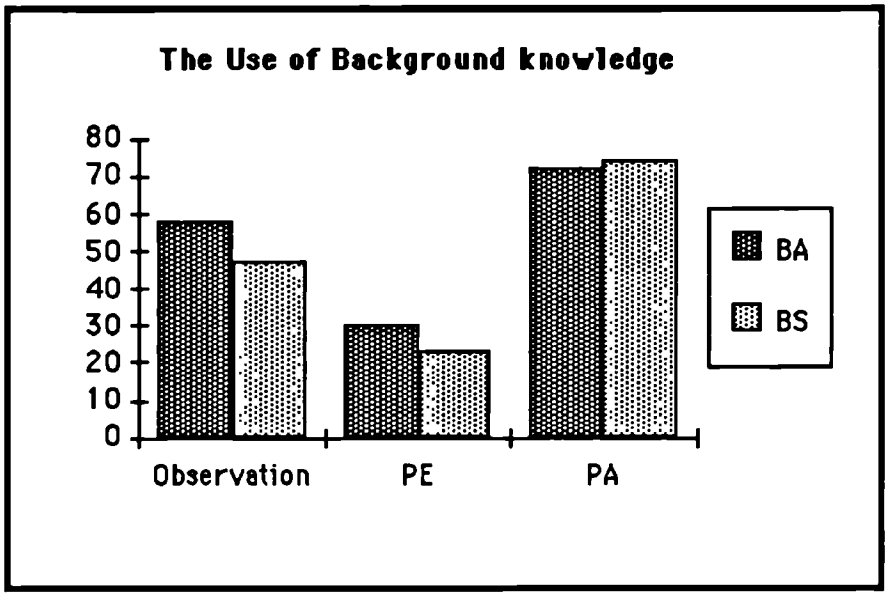
BS		BA
2. We know that the aeroplane cannot in the air if something is gone wrong in it which make it facing a matter of life and death.		It is natural matter when the aeroplane is up in the air it cannot stop in the air if get any mistake.
3. From my knowledge I can say that there are different types of engines and each engine has itself weight and according to its type the fuel consumption can vary.		It is clear that the plane has to be practical in carrying the very bearable weight in it because it is a matter of carrying the very, the most maximum weight in it and on the other hand it...

Subjects also used their prior knowledge to express their disinterest and contempt with familiar topics, especially in the observation sessions

S 41 *Always the tests are with patients and doctors and nurse that text are looking the same idea that makes them boring*

S 42: *We want many texts and short about the social life.*

S 46: *The topic is some kind of advertisement or publicity. I should have some background knowledge before reading the text*



The **recognise text structure** RS occurred mainly in the reading of the Arabic text and to some extent in the observation sessions but not in the English reading, with the BA group showing more frequent use than the BS (see Table below).

Table 7.7.4.2

Recognise text structure.

MODES	BS	BA
Arabic protocols	26%	48%
Observation	13%	37%

Text analysis research (Meyer 1975) has suggested that certain aspects of structure do influence the amount of information comprehended and recalled and that tenable deduction can be made as to where distortions, omissions, additions, substitutions and reconstructions will occur. Meyer (1975, 1977) has also shown the influence of the

hierarchical structure of exposition prose and the importance of the position of ideas within text structure. Within the context of an appreciation of reader-text interaction, analysis of text structure seems both warranted and appealing.

Meyer's structural analysis of prose is based on relationships which she defines as predicates. There are two types of predicates, lexical and rhetorical. Generally the lexical one dominates the arguments of a sentence. Rhetorical predicates (already referred to in Chapter 3) relate ideas that typically extend across sentences boundaries. More importantly they are the means by which an author organises the whole text.

In their reading of the Arabic text subjects often saw the different parts of the text in a cohesive pattern. In other words, they employed strategies that clearly reveal their concern and awareness of text structure. The following examples indicate recognition at different levels.

S1: *In the first paragraph it talks about.....*

S3: *We find that the first paragraph gives an idea of .....*

S18: *It should be listed what are the ..... not in this way.*

S23: *Here before talking about anything especially in the field of medicine it must be that the topic should be defined bringing out the symptoms..*

S33: *The first part talks about.....*

S47: *he doesn't state ... he just mentions that the advantages....*

In their use of this RS in the observation sessions, subjects revealed recognition of the English text structure of a very superficial nature (eg prints, pages, pictures, but not text as such) as the following examples illustrate:

S37: *The text in my opinion is divided into two parts, the first page is sweetly interesting and the page opposite is strongly dry and has lots of repeated information*

S 42: *When I saw the picture about the nurse, how can I predict the missing words in rhymes.*

S 45: *Some of the printing in the lesson not clear, too small so we find a problem when we read it.*

7.7.4 Reread, integrate and interpret

One of the simplest way of trying to get over a problem is to read the text again. This RS has featured in both the Olshavsky and Block lists with different manifestations. In the present study there was no indication of this behaviour in the protocols but in the self-observation as well as in the questionnaires subjects stated that they did employ **rereading** as a RS. This is because rereading is more overt in oral reading than in silent reading unless the reader explicitly states he/she is doing so. In the observation sessions subjects would explain their problems and provide 'reread' as an immediate solution.

Examples

S1(Problem) *How to understand the idea of process?"*(Solution) *Read again.*

S14 : (Problem) *New information* (Solution) *Repeated reading.*

Rereading may lead to understanding, though not always. It may also lead to **integration** of ideas. The underlying assumption, therefore, can be that where the 'integrate' RS is employed there is no doubt some amount of 'rereading' going on.

Examples

S5: [..] *there is a question I don't understand....clarifies what this question...*

S5: *Is going on the paragraph 5 then it is talking about how we....*

S33: *Here it talks of the inflammation of the chest and lungs. What is now the relevance? Why was this not mentioned earlier to tie up the whole topic*

As a reader takes in information, sentence by sentence from the printed prose, certain expressions and meanings are evoked and must be linked together through inferencing

to create **interpretation** of the text. Part of this constructive process involves an ongoing self-monitoring which brings reading to a halt if the reader cannot make sense of the text, and initiates fix-up strategies to regain meaning. Thus the *interpret* RS is a strategy that the reader employs at this stage of his/her reading.

Examples

S33: *I think the subject is pointing to the case of TB.*

S2: *The stress man I feel is an important and has an important part in the process and this would result in better design*

S39 : *In the aeroplane there is comfortable things for passengers.*

7.7.5 Reacting to the text

Using this RS the reader has tried to express his reaction towards the reading material, either in the way of praise or criticism. At this stage the reader is in a position to go beyond his concern with words and phrases, even beyond integration and recognising text structure. The strategy reveals the critical side of the readers. In other words problems at this stage are of critical nature.

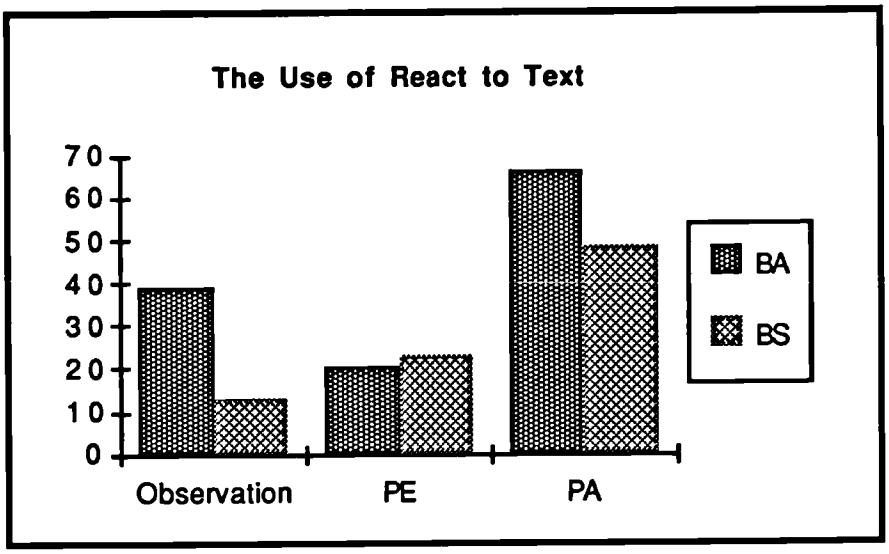
Examples

S37 : *I think the text all about not really useful or interesting.*

S34 : *like this expression 'it is .... life or death'.*

S42 : *The paragraph is good and clear.*

It has been a favourite strategy with some readers throughout the design.



7.7.6 Overt strategies

There are three strategies that can be described as overt. These are *use dictionary* , *use reference* and *seek assistance*. These are the most tempting of all strategies because they are the easiest, and less demanding than the covert ones. In the verbal protocols the nature of the task was such that the subjects were not encouraged to use these 'facilities' so it is but natural that the use of these RS did not manifest in these sessions. Therefore all the discussion concerning these RS are from their manifestation in the observation sessions alone.

Even in their use of overt RS the BA group has shown more frequent uses of all the three RS than the BS group.

Table 7.7.7.1

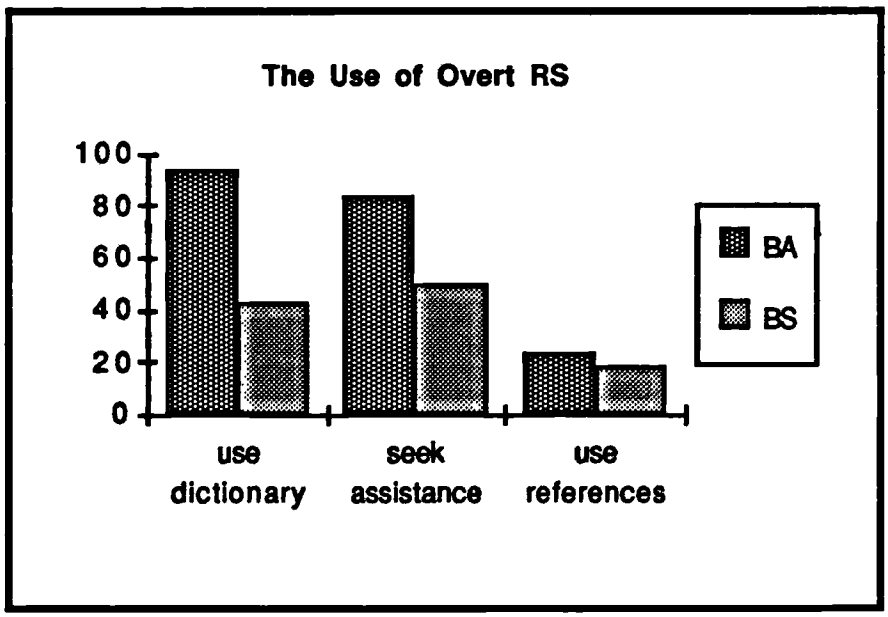
The use of overt strategies in L2

	BS	BA
1. Use dictionary	43%	94%
2. Seek assistance	50%	84%
3. Use references	18%	23%

The reliance on **seek assistance** RS in a classroom situation is obvious since the social setting that the classroom provides encourages students to ask either the teacher or their peers for clarification of problems.

The **use of the dictionary** in the classroom is a transfer of habit from their school years where the lessons are normally glossed. Glossaries provided in school books are similar to bilingual dictionaries, although in their 'solutions' for word problems subjects insisted on the use of English/English dictionaries.

The **use of reference** indicates the awareness, at least, with some students that they have reached college where it is not sufficient to be dependent on dictionaries and peers.



7.8 Use of PI and PS strategies in L1 and L2

The identification and solving of problems no doubt are two distinct behaviours. In other words the ability to identify a problem does not necessarily mean the ability to solve it. The solution depends on the reading material, proficiency level, reading situation among other things. It also depends on the subjects' reading L1 and L2.

Subjects in this study showed distinct behaviours not only across specialisation but across the two languages as well, as is shown in the Table below.

Table 7.8.1 :

PI and PS across the groups and languages.

	BS		BA	
	L1	L2	L1	L2
PI only	20%	53%	3%	17%
PI &PS	80%	47%	97%	83%

In English the BA group used strategies more frequently than the BS group. The BA readers used strategies 446 times (an average of 15 RS per subject); the BS readers used strategies 348 times (an average of 11 RS per subject). The quality of these RS are also different. In Arabic, again the BA used more strategies than the BS, though the difference is not so big as in L2 (see Table below)

Table 7.8.2

	L1		L2	
	BS	BA	BS	BA
PI	159	115	272	301
PS	124	193	76	145
Total	**283**	**308**	**348**	**446**

7.9 Influence of proficiency on PI and PS strategies

Proficiency in reading in this study was computed from the total mean of the three reading tasks set for the subjects as well as the Teacher assessment. By taking the top 25% of the group and the bottom 25% a comparison was drawn for the types of RS these subjects used. The purpose of this was to see if there was a relationship between the type of RS used and proficiency levels. In other words, is it the case that good readers use problem-solving strategies more often than do poor readers. The

correlation between the two variables, proficiency and class of RS, did not reach significance at .001 level (r=.1977). This is consistent with the previous studies. In Olshavsky (1976-77), for example, the results failed to support the hypothesis that good readers use different strategies, but they lent support to the hypothesis that good readers use strategies more often. There did not seem to be a pattern of strategy use in the Block (1986) study which distinguished the ESL readers from the native speakers of English, ie the proficiency variable had no significance.

7.10 Strategy use across individuals

I referred to diversity and consistency in strategy use in the first half of this chapter. There I gave an overall picture of RS use across the three modes. Here I look at RS use across individuals on case study basis. It is because apart from the similarities and differences shown in RS use across the groups and languages, there are differences in the way different students tackle the reading task. I consider it useful, therefore, to select a number of subjects from the three categories (groups, languages and proficiency levels) and examine their RS. The rationale behind this is that grouping data tends to reduce the effects of individual differences in favour of the similarities across individuals. It is beyond the scope and purpose of this study to provide an in-depth exhaustive analysis of the reading behaviours on a detailed qualitative basis. The following list of subjects is, therefore, presented for this discussion. It gives examples of the different types of readers that the theoretical orientation has defined. In the following table I first present the scores of these subjects on each assessment and the total mean.

Subject	Group	Cloze	Recall1	Recall2	Teacher	Mean
S2 (good)	BS	70	75	75	84	76
S5 (poor)	BS	40	50	36	68	49
S37 (good)	BA	60	84	100	80	80
S38 (average)	BA	40	84	75	61	65
S29 (good)	BS	60	84	75	88	77

S 46 (good)	BA	70	100	84	64	80
S 1 (poor)	BS	40	50	24	92	52
S 50 (poor)	BA	40	60	00	58	53

7.10.1 Good vs Poor (BS)

S2 and S5 are from the B1S group. S2 is a 'good' reader although he described himself as average in the interview. His concept of a good reader is *'a person who understands'*. He further elaborates in the interview *'when I intend to read something I should have a good idea about it and if I had some difficulty in the language I would also find some difficulty in the content and I think understanding of the content is related to understanding the language itself.*" S5 considers herself an 'average' reader and her results confirm this, placing her in the 'poor' category. Her concept of a good reader is *'a person who reads more'*. She believes that *'asking questions in language and content helps me to understand the idea and helps me to read the different words so this method helps me to read more.'*

The following Table is an extract (6-10) from the English protocols of the two readers. (the complete version is provided in the Appendix I). It illustrates the type of reading behaviour each reader adopts.

S 2		S 5
6. The stress man I feel is an important has an important part in the process as to give good information and this would result in better design.		Is going on the paragraph 5 it is talking about how we test about the part of the aeroplane, simple, no word is difficult.
7. Each part of the plane is tested, then those parts are assembled. These designs of an aeroplane are assembled to make initial tests on them.		7. No.
8. The structural tests on two of the aeroplanes are performed and the third one is to be flown in the air.		8. Not any difficulty.

9. The ground tests should be tests of strength of each part of the plane or the whole plane. There is a question I don't understand.		9. No.
10. Clarifies what this question. For each part it is said to be tested on ground and then some further tests are put to determine when each part should collapse or wear out.		10. The idea is understood.

S2 portrays a vivid picture of his beliefs in his reading behaviour. He tries to 'understand' the content and neatly states his problems, seeking solution as he reads on. He did reveal some problems with words in the earlier portions of the text but he seems to have gained mastery as he reads on, which is clearly his idea of *'understanding of the content is related to understanding the language itself.'*

S5 uses 'monitoring comprehension' too often. Her asking questions strategy to 'understand the idea' is clear in *'the idea is understood'*. Again her preoccupation with words - *'helps me to read the different words'* - shows in her use of monitoring comprehension in monitoring of words *'no word is difficult'*

7.10.2 Good vs Average

S37 and S38 are from the BA1 group. S37 is a good reader and S38 is average. They self-rated themselves rightly.

S37 stated in his interview *' Well I believe the technique that I have developed is to vary my reading topic, I mean not to read something in specific.....I believe whenever I meet some strange or curious words I just utter it, pronounce it as I have in my mind a rule maybe it's not a principle but whenever I meet some strange words I just pronounce it as I may see it'*. His idea of a good reader is *'a person who has a good experience in dealing with the words while reading because experience in reading*

especially is connected very much because of the curious and the strange words that English has.'

S38 believes that *'a good reader is a person who can at first reading guess the main meaning of what he read'.* She elaborates *'when I read anything I must, I must ask at last I get the all meaning.'*

The following are extracts (1-5) from the protocols of these two readers.

S37		S38
1. Well I think we have here a very good expression, it is in 'as reliable as ', 'as light as'; it gives the perfect, the idea plane it will be and so on.		1. It is clear.
2. I don't think that this performance is absolutely dependable because this technology is very proved and the people who are specialised in repairing the wrongs that happen in the plane, in the sky, they' re capable to mend it to repair it.		2. It is clear but there is some word like 'performance' and 'dependable'.
3. It is clear that the plane has to be practical in carrying the very bearable weight in it because it is a matter of carrying the very, the most maximum weight in it and on the other hand it has to be safe connected with the load.		3. It is clear but there is some word like 'consequently' and 'consumption'.
4. There has to be some rooms or spaces or in other words the rest of the weight needed has to be available for the other things carried in the plane for example the.. the passengers' seats, it is mentioned here.		4. It isn't clear; I mean that there is some word which cannot help me bring out the main meaning like it is a name of thing, I think, 'navigational' and 'freight room'.

5. As a student I don't know the structure here what it means, point or principle, the word 'precaution, here, it will be more familiar to us if it will change to caution; we certainly know the word 'caution'; 'precaution' is a bit strange.		5. I get the main meaning but there is some word like 'the designer', I think it is a name of one part of the aeroplane have a special function, I can't guess what is its exact function and there is another word like 'efficiency', I think it is 'exactly' but I can't get its meaning.

S37's idea of varying his reading topic is evident in his reading behaviour. Though an Art student, he seems very much at home with the text. His 'curious word' notion is exemplified in his protocol 5 where he comments on the word 'precaution'.

S38 is no doubt an example of a mixed (word-centred as well as meaning-centred) reader. Her 'main meaning' is evident in protocols 4 *'....which cannot help me to bring out the main meaning'.*, and *'I get the main meaning'*. Her sense of guessing is also very clearly demonstrated in *'I can't guess what is its exact function'*.

7.10.3 BS vs BA (good)

S29 is a second year Engineering student and S46 is a second year English student. Both are 'good' readers. Both readers consider themselves as good readers but have no clear concepts of good reading. S29 believes that a good reader is someone *'who reads anything'*, while S46 thinks that a good reader is someone who *'can understand the content'*. The two reveal reading behaviours typical of their specialisations.

S29		S46
5. Of course in the first type of aircraft when it has the properties it is light in weight and in its efficiency is more and this can be done by the designer, the man who is responsible for this type of constructing,he must calculate how he can find the normal load for each part or for each component of the aircraft.		5. It gives information about the structure of the air- craft has to be small and safety, the designer must calculate the normal load of each part, the meaning of 'bear' I can't understand it.
6. It is about the stress man who calculates. The stresses which can be used for the construction of any part of the aircraft; he takes into account also the unusual stress; unusual stress can be taken as a factor of safety in case of , against any error in the manufacturing the structure engine as the stress man calculated.		6. There is a man called 'stress man'; he is specialist the structure of the air-man; he takes account of any unusual stress may be put on the part and he is structure of this aircraft the designs the part of the aeroplane and he must make it as strong as the stress man says is necessary; the meaning of or pronounce 'precaution'.
7. By this way we can structure any wing or any part in the aeroplane.		7. I can't understand the meaning of 'samples' because I think it is the key for the rest of this para.

S29 displays a good knowledge of the subject-matter and she uses it to elaborate on certain points. Similar behaviour is shown by S46 though bringing out the uncertainty that may arise because of lack of discipline-specific vocabulary as is stated in protocol 7 *'I can't understand the meaning of 'samples' because I think it is the key for the rest of this para.*

7.10.4 BS vs BA (poor)

S1 is a poor student from the BS group. She thinks a good reader is someone who understands the subject matter. Her method of asking questions helps her in understanding the subject matter and grammar. S50 comes from the BA group,

considers himself a good reader in both Arabic and English and conceives good reading as '*pronouncing the words correctly and phonetically.*'

S1		S50
6. I understand the sentences but I have a word, the word 'precaution' which is difficult to me.		6. I find 'precaution' is difficult.
7. I understand the sentences but I have two difficult words 'intended', and 'assembly'.		7. I don't find any difficult words.
8. I understand all the sentences.		8. Same.
I understand all the words but I don't understand what mean by these words.		9. Same
10. After I read 10 I understand what mean by number 9 and I understand it but one word which is difficult to me. The words is 'fatigue'.		10. I find 'collapse' and 'fatigue' is difficult.

The samples from the protocols of S50 shows that he is in fact word-bound, looking for difficult words only. His problems therefore are located in the different words he sights as problems. S1 on the other hand, reads in sentences. She is a reader, who though designated as poor, does show some effort of comprehending. Her use of integration tells us that.

7.10.5 L1 vs L2

For a comparison of RS across the two languages, I choose S38, my mixed reader again. Her reading of the English text as I have shown is a combination of guessing and getting on with the main meaning, her style of interacting with the text. Her reading in Arabic is equally marked by the same kind of interaction, though there is less guessing and more assertion (see also section 8.4.2b on strategy transfer).

Text 6-8

Of course it is telling about the symptoms of the disorder, that is if there is any disorder in the respiratory system in old people and then it says that among these symptoms is the rise in temperature but in old people this is not a basic sign for an illness with the addition of the decrease in the number of white blood cells.....

Text 9-10

It is a piece of advice to old people or to anyone in general that prevention is better than cure because in the case of old .....

A close examination of the reading behaviour of subjects with different notions about what constitutes good, effective reading illustrates very specifically the interaction of notions about reading and reading performance. Earlier studies (Devine 1988) have demonstrated that a reader's theoretical orientation toward reading may determine, to some extent, the degree to which low proficiency in the language restricts SL reading ability and, second, that the models that readers hold may be of crucial importance in allowing them to strike a balance between bottom-up and top-down processing necessary for the interpretation of a text. However, the positive correlations between the variables, concept, reader type and class of strategy did not reach significance at .01 level, as Table 7.6.4.1 indicates.

Table 7.10.5.1

	CLASS	TYPE	CONCEPT
CLASS	1.000	.1143	.1851
TYPE	.1143	1.000	.1272

It may be the case that good readers may resort to the same type of RS as poor readers (eg S1 and S38), the good readers system causing them to revert to poor reading strategies when confronted with a difficult or confusing task in SL reading. This confirms the belief put forward by Clarke (1988:120)

> It may be inaccurate to speak of 'good readers' and 'poor readers'. Perhaps, there are not 'good readers' and 'poor readers' but merely 'good, and 'poor' reading behaviours which characterize most readers at different times.

7.11 Other factors affecting reading

To complete the multi-sided approach to the study of RS the design has also tried to include factors such as familiarity and comprehensibility rating in recalling of reading texts. Familiarity in this study refers to the presence or absence within the reader of prior knowledge or experience of the content of the text.

The subjects' ratings of the comprehensibility of passage was on a 4-point scale (1= very difficult and 4= very easy to understand). The percentage of idea units recalled was out of a maximum of eight units for each text. (see Appendix B3 and B4 for list a priori of the idea units). Descriptive statistics for these two variables are reported in the Tables below by subject groups. (Note that Task 1 was the familiar one for the BS groups and Task 2 was the unfamiliar one; and for the BA groups it was the other way round).

Table 7.11.1

Comprehensibility Rating (CR) and percentages of Idea Recalled (IR) by subject groups

1-4 rating scale 1= very difficult 4= very easy

Groups	Task1		Task2	
	CR	IR	CR	IR
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
B1S	2.8 (0.7)	58.8 (18.7)	1.8 (0.4)	45.8 (17.5)
B2S	2.8 (0.4)	65.9 (13.9)	1.9 (0.5)	51.9 (20.8)
B1A	3.1 (0.4)	67.4 (13.2)	2.1 (0.33)	50.1 (23.8)
B2A	2.9 (0.6)	68.3 (20.8)	2.0 (0.5)	47.1 (21.3)

Looking specifically at the comprehensibility rating first, since it is an interesting dependent measure because it reflects subjects' own perceptions of their reading, we can see that familiarity is a significant component of the background knowledge as far

as the BS students are concerned both when their means on the familiar task are compared to their means on the unfamiliar one, as well as when compared to the BA groups for whom the task is unfamiliar. On the other hand we find that the BA group does not show such a difference. On the contrary its ratings of the familiar text is lower than that of the unfamiliar text. Therefore in their case the other component 'text difficulty' proved stronger than text familiarity (see also 8.4.1c). However, this is only within the group. When one compares the ratings of this group with that of the BS for Task 2 one finds that the BA group, in fact, did comprehend task 2 more than the BS group did. The ratings take a developmental pattern (1.8, 1.9, 2.0, 2.1,).

Turning to the percentage of idea units recalled by the subjects, the more objective of the two dependent measures, Table7.11.1 shows that, for the BS group again, the components, proficiency and familiarity, contributed to the quantity of text recalled, in that the B2S did better in Task 1 than the B1S as well as than in Task 2, and both BS groups recalled more of Task 1 than Task 2. With the BA group the same is not true. Both the I and II year did better with the unfamiliar text than they did with the familiar one. This can be attributed to text difficulty. However, as with the comprehensibility, at least the I year group did better than their counterparts with the second task. This difference can again support the view expressed earlier that familiarity does, to some extent, affect text comprehensibility as well as text recall

In order to determine the extent to which subjects' ratings of the passages tended to covary with their recall - in other words, if subjects tended to rate the passage as easy - did this mean they recalled more than if they tended to rate the passage as difficult, the relationship between the variables was calculated. Table 7.11.2 presents the results of Pearson Correlation Coefficient between comprehensibility rating and recall percentage.

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Table 7.11.2

Pearson Correlation Coefficient between dependent variables comprehensibility rating and recall percentage (Note: RC= recall task; CR= comprehensibility rating)

	RC1	RC2	CR1	CR2
RC1	1.000	.3692**	**.3194***	.2480
RC2		1.000	.3209*	**.3392***
CR1			1.000	.3676**
CR2				1.000

Note: Numbers in **bold print** indicate where significant correlations were expected.

*= signif. level at .01; **=signif level at .001

The results show that on the whole the groups exhibited a significant positive relationship between their ratings and their recalls. This indicates that they have a good sense of how easy or difficult a text is for them to understand.

7.12 Effects of prior knowledge and proficiency on recall among individual readers

According to Rumelhart (1977), the automaticity of main idea construction may be influenced by the reader's prior knowledge. As we have seen (Ch. Three) prior knowledge has been shown to facilitate comprehension processes generally. We have also seen that schema theory suggests an explanation for the facilitating effect of prior knowledge in text comprehension and recall (eg Anderson & Pearson 1984). Readers with high prior knowledge of the content domain have well-developed schemata, or knowledge structures into which they assimilate the information from a text. That is, in the terms used by Voss et al (1980), information from the text is mapped onto the reader's existing knowledge structure. Others like Fincher-Kiefer (1988) suggested that prior knowledge of the content domain of a text allows the reader to interpret information from the text more quickly, and to organise large chunks of the text for both comprehension and retrieval.

In comparing native speakers' recall of familiar/unfamiliar passages with non-natives, Carrell (1983) found that familiarity played a role in the way native speakers read, understood and recalled passages. Among non-natives only advanced ESL readers were affected by familiarity. In other words proficiency was a predictor of recall of familiar texts. For the purpose of looking at how proficiency and prior knowledge functioned with the Yemeni readers I tried both quantitative and qualitative procedures.

For the quantitative measure, the proficiency, as measured by the total mean from the four scores, and the the results of the two recall texts were correlated. The results showed that there was a significant positive relationship between each of the two scores and the total mean (see also 8.2).

For the qualitative evidence I refer to my eight subjects again.

7.12.1 Good Vs Poor

My poor reader, S5, as the recall of ideas show, managed to recall more of the familiar passage than the unfamiliar one. Therefore, for her the background knowledge proved important. However, she found the passage 'difficult' and managed to recall the following main ideas only from Task1. Her counterpart 'good' reader found Task1 'very easy' but recalled six ideas.

Of the unfamiliar task which she considered 'very difficult' S5 managed to recall only three ideas (and that too in Arabic) whereas S2 who found it 'difficult' recalled an equal number of ideas as from Task1.

S 2		S 5
a. the importance of water itself. b. water cycle in nature. c. such cycle involves some **particular processes (gas).** d. thinking of benefiting of water as much as we can. e. the importance of trees and plants. f. thinking of other **sources of energy** instead of wood.		a. the water obtains from the rain as one source. b. the rain falls to the ground, some of them stay in the ground and other evaporates. c. the community is concerned to rain falls to supply concerned how much stay and in the sea. d. the ground picks the water and the trees benefit it.

S 2		S5 (translated from Arabic)
a A stranger is somehow pleased or doesn't like the police b. Mr. Budd is a hairdresser c. a conversation in a **local language** d. the **accident** of Mr Budd's e. a doubtful look of Mr. Budd to the **customer** f. the **reaction** of the stranger		a. a meeting between a stranger and Mr. Budd. b. the stranger's concern with news of the prize. c. the similarity between the stranger and Mr. Budd's friend

S5's recall of ideas in sentence form and reliance on the text vocabulary indicates that she may be processing the literal language of the text. We have already seen her as a linguistic-bound reader in the protocols. Her shift from English to L1 for Task2 confirms her perception of the task as 'very difficult.' S2, on the other hand , does not seem to be affected by either the familiarity or the difficulty of the texts. His manner of recall in phrase form *'the importance of water itself'* and use of domain-specific vocabulary (Anderson & Freebody 1981)) such as *'processes'* and *'sources of energy'* clearly differentiates him from S5. The common feature of the recall between these two readers (both are from B1S) is that the prior knowledge of the content domain of Task1

has helped them to generate hypotheses about the content and the structure of the text. Task2 has no doubt proved difficult even for S2 *'a conversation in the local language'*. The language of the text (see Appendix B4), in fact, was not in any 'local' dialect, but in a dialogue-cum-expository form.

7.12.2 Good vs Average

Both S37 and S38 recalled equal number of ideas from Task1, though S37 found the text 'very easy' compared to S38's 'easy'.

S37		S38
a. **the falling rain in its moment.** b. **forming by spreading** streams and rivers. c. the useless part of the rain goes to sea. d. the following process, the water vapour gas up by evaporating . e. it **condenses** clouds f. and again it rains because of the wet heavy clouds. g. the **advantage and disadvantage** of the rain, for instance, the water requires for **agriculture**, and sometimes it is harmful in **storms and thunders.**		a. **the passage is talking about the evaporation.** b. first the sunshine on the forest and the water evaporates and...it is collected as a cloud c. after that the sky rains. d. the rain is very useful for our drink, wash and use. e. we must be very careful in using the water which comes from the rain f. we must plan to keep it longer and not leave it to go to the sea. g. another important thing is we must plant many .

Both subjects found Task2 'easy', too, S37 recalling all the main ideas and S38 recalling 75% of them.

S37		S38
a. it is about a wanted escaped man. b. Mr. Budd is perhaps a barber. c. there is an announcement about the wanted man in the newspaper. d. a reward will be given for catching the man. e. the wanted man's nail is cut. f. Mr. Budd's customer has a thumb nail cut. g. Mr. Budd is doubtful about this man. h. the man's look increased his doubt.		a. Mr. Budd is a hairdresser and there is a strange man sit in front of the glass while Mr. Budd prepare the stranger's hair. b. they are talking about the police and how this job become a bad job. c. mr. Budd noticed that the thumb of the right hand of the stranger man is very ugly and remembered with his friend which was alike this. d. the man is reading a paper which mr. Budd bring to him. e. Mr. Budd look at the reflection of the man's face and eyes from the glass.

Both readers follow the main line of the text for both Tasks, S38 more so, in keeping with her concept of a good reader. She starts with *'the passage is talking about...'*, clearly recognising and defining the structure of the text. Though she uses simple language *'the rain is very useful for our drink, wash and use'*, she manages to get almost all the main ideas for Task1. She follows the same trend for Task2, though finding problems with language, *'prepare the stranger's hair'* and *'the stranger man'*. S37, on the other hand, shows more control of the language *'a wanted escaped man'*, *'announcement'* and *'customer,'* in the familiar text and *'agriculture' 'storms'* and *'thunders'* for the unfamiliar text, showing how when accessing schemata the reader is also accessing domain-specific vocabulary, eg *'announcement'* for 'it's in tonight's paper'. Even with the unfamiliar task he sees the relationships among the subideas and recognises the structure and ties the sentences, eg *'the advantages and the disadvantages of the rain'*.

7.12.3 BS Vs BA (good)

S29 found Task1 'easy' and so did S46 for whom the Task is unfamiliar and who recalled all the ideas whereas S29 missed one main idea

S29		S46
a. circulation of water, as the rain falls down on the ground. b. some of it runs off into streams, and some soaks into the group. c. evaporation of water from the seas, lakes, wet areas into the atmosphere which is carried out by the wind. d. condensation of water which falls again in forms of rains and e. these rains may be helpful or harmful for men. f. the amount of water stays on the dams and which runs off into the sea. g. the trees in the forest gets benefits from this water because it stored in roots for long time.		a. water goes round as cycle. b first it runs off to collect rivers. c. In the sea, it vaporates into the air. d. in there it forms clouds. e. the community concerned about the rains. f. sometime the rain soaks into the ground. g. forest consider as underground stores for water. h. we must not cut down the trees.

S29	S	S46
a. discussion between two men, Mr. Budd and the stranger. b. the job of Mr Budd is hairdresser. c. the paragraph is actually talking about the reward. d. Mr. Budd wants to know this reward which is there in the evening message; he left the drier and fetched the paper. e. while the other man (stranger) watching him from the glass, and suddenly he draws his left hand which was on the arm seat and hide it under the apron. This arm which actually misshappen in the thumb nail. f. Mr. Budd saw him and he remember that he has a friend which has the same ugly mark on his finger.	S	a. there is a reward. b. 'Evening Messenger' is . the name of the newspaper. c. Mr. Budd is a barber. d. the stranger has a horny thumb-nail in his left hand. e. Mr. Budd made a suspection in the stranger. f. the stranger felt that Mr. Budd knew him.

S29 considered Task2 'very difficult' and S46 found it 'difficult. However both recalled equal number of ideas.

Looking at the ideas recalled by these two readers we find in S29 an example of a reader who combines proficiency and text familiarity as far as Task1 is concerned. Her access of domain-specific vocabulary, eg *'circulation', evaporation'* and *condensation'* clearly marks her out as an interactive reader who does not look for meaning in the text, but rather constructs it out by activating her background knowledge. In contrast to her the Art subject could only come up with the exact words from the passage, viz' *cycle, evaporates, clouds'* for the same idea unit. When we look at the ideas recalled for Task2, we find S29 recalling the ideas in a manner which, though acceptable, is not truly in the idea form. S46, on the other hand, is more concise.

7.12.4 BS vs BA (poor)

For the first task which S1 considered 'very easy', there were only four ideas recalled. S50, too, considered the task 'very easy, and recalled five ideas.

S 1		S 5 0
1. The cycle of the water. 2. The ways which water passes through it. 3. The work of the community. 4. The storage of water.		1. Water moves as a circle. 2. Water evaporates to a cloud then get down as water. 3. The water rain carried a number of substances 4. some of them harmful and the other useful. 5. The community keep water in a dam to use it in the future.

The unfamiliar task for S1 proved difficult and she gave up after recalling two ideas. S50 found the task difficult and made no attempt at all at recalling, though a familiar task for him.

S 1		S 50
1. The noticing of Mr Budd to stranger man. 2. Conservation between a customer and barber.		

As the above examples show both components, familiarity and proficiency, play a role in the way readers read understand and recall texts. 'Good' readers reading texts from familiar content domains may not have to construct main idea statements at all (Afflerbach 1990). Research also suggests that readers with high prior knowledge map incoming text information onto existing schemata.

> Thus readers with high prior knowledge may already in some sense "know" the text, and may bring possible main idea statements to their interaction with the text. Such a reader would need only to affirm or modify a main idea statement which existed prior to the reading task, rather than having to construct one
>
> (p. 40)

7.13 Comparisons between typologies of RS

To conclude my discussion on RS and before moving to the reading process and the models, I present my list of strategies in order to draw comparisons with the documented ones in literature. I compare my list with the ones by Olshavsky (1976-77) and Block (1986) whose approaches influenced the present typology.

Table 7.13.1

RS list in the present study compared to Olshavsky (1976-77) and Block (1986).

[yes=strategy is listed and under similar labels]

The present study	Olshavsky (1976-77)	Block (1986)
Problem-identifying strategies	Yes	No
1. Monitor comprehension	No	Yes
2. Question pronunciation	No	No
3. Question word	Yes	Yes
4. Question phrase	No	No
5. Question sentence	Yes	Yes
6. Question paragraph	No	No
7. Question structure	No	No
8. Question content	No	Yes
9. Question information	No	Yes
10. Comment on behaviour	No	Yes
Problem-solving strategies (COVERT)	Yes	No
11 Guess	No	Yes
12. Infer	Use context	No
13. Paraphrase	Synonym substitution	Yes
14. Summarise	No	No
15. Get main idea	No	No
16. Use background knowledge	Yes	Yes
17. Recognise text structure	No	Yes
18. Reread	Yes	Yes
19. Integrate	No	Yes
20. Interpret	Inference	Yes
21. React to text	No	Yes
(OVERT)	No	No
22. Use dictionary	No	No
23 Seek assistance	No	No
24. Use references	No	No

Note: The **highlighted** RS have been documented in literature.

As is obvious from the list above, out of my 24 RS, 16 have been documented (seven of Olshavsky's ten and 14 of Block's 15). No doubt each list is dependent on the aims and research instruments of a particular study. My typology vividly demonstrates this feature. It is dependent on my research design. ***By including classroom observation as an instrument, I have been able to observe and ask subjects to self-observe their reading behaviour more closely. This is an added dimension to the study and which differentiates it from other studies. The overt strategies included in the list are, therefore, based on this particular source of information.*** This also provides a vivid picture of the selected RS that readers resort to as their 'first aid'. The protocols fail to provide information of this type by their very nature of being dependent on the covert, mental reading behaviour. In real life reading situations when a reader faces a problem in SL reading and which he/she can solve by asking someone or using a dictionary, there seems very little point that the reader will spend hours wrestling to guess or infer it . No doubt there are reading problems that are dependent on the background knowledge but there are many occasions when a word or phrase can make so much difference to one's understanding of a text.

Another feature of my list is the including of RS at very detailed levels. For example the *question meaning of word* strategies appears in one form or the other in the two lists but in my typology I have also included two other RS that are very closely related to it, viz *question pronunciation* and *question meaning of phrase*

Pronouncing words in silent reading is not unusual. It is what Broughton et al (1980) call 'barking at print'. It is in fact the psycholinguistic aspect of silent reading. For some readers it can be a major problem. It is a decoding skill from an information-processing viewpoint

> Decoding skills are those that permit the reader to recognise printed text, pronounce words, and ultimately access meaning.

(Schwartz 1984:88)

In other words for certain readers decoding skills are those necessary to process individual letters, words and other small units. Pronouncing problems are also attributed to the subjects' L1 where a different sound system exists. Besides, it is needless to point out that, due to the irregular English sound system, readers always face pronunciation problems, especially when if their own L1 has no such problems, where words are pronounced the way they are written.

Phrases too are problematic to readers. Understanding words does not mean understanding phrases in which the words occur. English is a language which abounds in phrases (eg verbal phrases) and to ignore a problem so clearly manifested in the data is like ignoring the very existence of a linguistic entity. Besides phrase identification is in fact considered a crucial skill towards 'chunking' or reading in meaningful groups or 'sense groups' (Nuttall 1982). As Eskey and Grabe rightly say

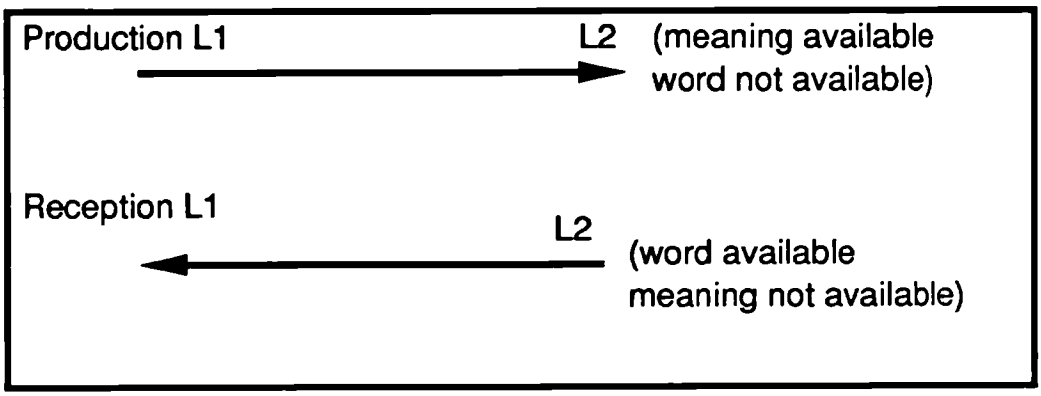
> This is an especially crucial skill for reading English, a language in which sequences of words frequently function as single items and syntactic construction carrying much of the meaning.
>
> (1988:233)

Similarly my including of *question meaning of paragraph* is again based on reading problems directly transferred from L1. Reading sentence by sentence is not very common in Arabic which is a language of paragraphs ('faqaraat'). This problem has already been demonstrated in the Arabic protocols. For similar reasons I was not satisfied with the *paraphrase* RS alone but on the bases of the information provided in the data included *summarise* and *get main idea.*

Therefore by broadening the range of the typology it has been possible to explore further dimensions in RS use.

My typology does not include four RS that have been found in the previous studies, viz *anticipate content, comment on behaviour, personal identification* and *use information of story*. I have already explained the reasons for the non-existence of the first three strategies (chapter 6). The *use information of story* strategy is clearly a very text-based sort of strategy and, therefore, does not need further explanation.

One other strategy which needs to be commented upon is **translation**. In the previous chapter I mentioned that translation was listed in the questionnaire and subjects did state that they used it in reading. However their reading behaviour belied their knowledge (see also 7.3 the strategy knowledge/strategy use section). I think that the reason for this is that there exists a fallacy that translation takes place in all SL learning. It is assumed that all SL learners probably begin with the assumpltion that for each word in their L1 there is a single translation-equivalent in the SL. More precisely, perhaps the assumption of word-for-word translation-equivalence in the mother-tongue is 'thinking in the mother-tongue' (Blum-Kulka & Lavenston 1983:132) is the only way a learner can even begin to communicate in L2. Mastery of L2 involves the gradual abandonment of the equivalence hypothesis, the internalisation of the semantic relationships in the SL production. Lexical transfer is a strategy of communication in production . In receptive communication the reverse is the case. The language (words and phrases) are there, it is the L1 equivalence of of L2 that the reader will be trying to find, if he is to use translation. Perhaps the following illustration will make this clear.



On the basis of this and where a RS is defined as a matter of solving a reading problem consciously, it is hard to imagine that 'translation' can in fact be termed as a reading strategy. If we consider 'translation' as a strategy in reading we expect the reader to replace an L2 item by an L1 item. For example, the word 'performance' in the English protocol should be replaced either by the local Arabic equivalent [*a'amal*] or the standard Arabic version [*ta'djia*]. In order to do that we expect the reader, in the first place, to understand the word, else how can he/she replace a word by an L1 equivalent if the meaning is not known to him/her, and once the L1 equivalent of the difficult word is known then where is the problem? I therefore think that it is but natural that translation does not feature as a RS though it is a well-established strategy in production (eg Ellis 1986, Tarone 1983). It is perhaps for this reason that it does not feature in the documented lists as well.

7.14 Summary

The general findings of the empirical research can be described as follows:

1. The five stages of the design have been analysed on two levels, viz quantitative and qualitative.

2. Descriptive statistics have shown that the Yemeni readers, as presented by their specialisations, have shown knowledge and use of 24 different strategies.

3. These strategies have been categorised as problem-identifying and problem-solving. Using problem-identifying strategies the readers revealed their problems mainly with words, phrases and content. Problem-solving at word level is dependent on *use of dictionary', seeking assistance* as well as on *paraphrase, summarise* and *get main idea.* Other higher level strategies, though present, are used only by a certain group of readers.

4. Reading in L1 is found to be dependent more on problem-solving behaviour than just identifying the problems, though the same covert RS are employed.

5. Proficiency, as measured by the subjects' scores on the different tests and teacher assessment, has been used as a variable to find out its effect on the use of strategies as

well as recall of passages. This has shown a positive correlation as far as these variables are concerned.

6. As a final step the chapter has presented the RS typology, bringing out the similarities and differences that exist between the present list and those reported in literature. The distinctive features of the typology can further be summarised as follows:

(a) The typology throws light on the actual use of RS in various reading situations, described as modes of strategy manifestation. These are L1 reading, and L2 reading, both in and outside classroom situations.

(b) The typology is also a reflection of RS use among different readers, as groups (specialisations) and as individuals (case studies).

(c) It also highlights the reading behaviour of discipline-specific readers (BS/BA).

(d) It clearly differentiates the PS strategies from the PI strategies and covert strategies from overt. (see Table 7.13.1)

It now remains to be seen how the use of the strategies investigated is related to the reading models.

CHAPTER EIGHT

Interpretation of Results

8.1 Introduction

The results in this study have been subjected to a two-layered analysis, viz statistical and qualitative. In my discussion of results I follow the same trend. I first discuss the statistical outcome of the empirical research and then I move on to the models outlined in chapter 3. Therefore, before defining the use of RS within models of the reading process, I present a discussion of the results. I start with the reading assessment.

8.2 Reading assessment across the groups

Subjects included in the sample were assessed in various reading areas. In addition, results of their reading performance were collected from the reading teachers. This was done to provide a baseline against which to assess the use of RS.

The results showed no marked difference in the reading skills of the subjects nor in their recall of the two passages conducted by the study. As regards the teacher assessment, some difference of attainment was identified. This can be explained in that the subjects come from four different groups taught by four different teachers. They have different course materials and therefore different test materials. Scoring was subsequently done against different criteria and, therefore, the difference in the results. However, when a total assessment was obtained no marked difference could be observed. In order to establish that the difference between the groups was random and not real the t-test was applied to the mean total in each group (ie to the 60.16 for the BS and 58.04 for the BA). This resulted in t=1.07 which fails to reach significance at the 0.05 level for 98 df. However, every test has certain assumptions which have to be met if we plan to use it in research. The t-test makes the following assumptions:

(a) that the populations are normally distributed. From histograms constructed for the two sets of score it does not appear that the distribution departs markedly from the normal

(b) that the populations' standard deviations are equal. In this study the sample standard deviation at 9.80 for the BS and 9.89 for the BA appear to be close enough for the assumption to stand and an F-test with p at 1.02 shows this to be the case (see Table below).

In spite of this the t-test is said to be highly robust (Hatch & Farhady 1982, Miller 1984) and can be used generally without much attention to anything other than the most glaring departure from normality and homogeneity of variance.

Table 8.2.1

T-test for the total mean of the two groups

	BS	BA		F-value	1.02
Mean	60.16	58.04		2-tailed p	0.94
SD	9.80	9.89		T-value	1.07
SE	1.3	1.4		DF	98

Further, correlation techniques were also used to examine the relationships between the subjects' performance in reading in each of the four tests and the total (this was done by first removing the contribution of that variable to the mean and then by retaining the contribution). The results in the first case indicate that the total attainment in reading was highly related for each of the recall tasks ($p < .01$ for Task1 and $p < 0.001$ for Task2). With regards to the TA and CT there was a positive, though not significant, relationship. In the second case there was a positive, and highly significant correlation between all the different measures and the mean (see Table below).

Table 8.2.2

		Mean	CT	RC1	RC2	TA
-variable	Mean	1.000	.2226	.3269*	.4975**	.0933
+variable	Mean	1 000	.5198**	.7002**	.8388**	.4101**

*=p<.01 **=p<.001

This means that, though each assessment on its own may not be a perfect measure of the subjects' reading ability, the total mean was a good predictor of their performance in the use of RS.

Therefore, from the reading attainment two facts emerged

1. that the BS, BA showed only a slight difference in their overall reading and recall skills at the time of this study
2. that the reading attainment obtained from the total mean of the four measures was a good predictor of the use of RS as used by these subjects

It is important for research to establish the strength and consistency of these relationships so as to know how much weight to place on a subject's attainment at any one stage of the analysis and discussion.

8.3 Relationships between concepts and outcomes

One of the concerns of learner-based studies, such as this, has been to establish relationships between concepts and outcomes. It is on such relationships that pedagogical implications can be built. In this study the reader's self-concept was assessed through questionnaires, interviews and other reading scales. The questions dealt with the reader's perceptions of their reading at various levels such as knowledge of RS, concept of good reading and passage comprehensibility.

The results indicate that the majority of subjects have fairly positive self-concepts about their understanding of their own reading ability as well as knowledge and use of RS. For instance, there was a significant, positive relationship between how subjects perceived a reading text with regard to comprehensibility and the amount of recall of those passages. Among the items on the self-concept scale, again a strong relationship was found between their own reading ability and TA. And again among the items on the knowledge and use of RS scales subjects were clear about the way they usually read. The RS they marked as their common strategies did manifest themselves in the use as well.

Information on self-concept and outcomes were obtained from all the 100 subjects enroled in the study but in-depth information on the actual use of RS was obtained only from a sub-sample of 60 subjects (30 from each group). The results suggest that performance and concepts tend to be related (r=0.185). This is in line with Garner and Kraus (1981-82) and Gambrell and Heathington (1981) who found a significant correlation between strategy knowledge and reading ability. This means that the readers' abilities and their knowledge and understanding of themselves as readers, their assessment of the reading task and their knowledge of what RS they use all can be considered as affective factors in deciding how successful they will be in reading a given selection. ***All this also lends reliability on how much to depend on their reading behaviour in protocol analyses and self-observation sessions.***

8.4 Differences in performance according to specialisations, language and proficiency

Subjects included in this study sample were drawn from two specialisations, viz Engineering and Education. They were almost all (97%) native Arabic speakers with

proficiency levels described earlier. Reading research has frequently demonstrated specialisation (prior or background knowledge), language(s) (L1, L2) and proficiency levels (good, poor) as good predictors of the use of RS (Olshavsky 1976-77, Block 1986, Cavalcanti 1983, Afflerbach 1990). It should be stated that, although differences in achievement could not be clearly identified between the two groups, differences in the use of RS have. The causes of such differences are discussed in the following sections.

8.4.1 Differences according to specialisation

Nonnative speakers of English around the world frequently need to read specialised English language material as part of their university course work. A traditional view held by the instructors in such specialised courses is that a knowledge of the specialised terms, via a glossary, will provide the nonnative reader with what s/he needs, particularly in scientific and technical texts. Experience has shown, however, that even students with mastery over the specialised terms become so frustrated in reading specialised English that they seek native-language summaries of the English texts, or native language books covering roughly the same material, or do not need the material at all, but concentrate rather on taking verbatim lecture notes. This approach tends to produce a passive learning attitude rather than the active, exploring approach so necessary if students are to develop sufficient competence in English to read the subject matter freely. As researchers have begun to investigate the reading problems of nonnatives, it has become clear that the difficulties extend beyond vocabulary. Two major problems have thus become the centre of the present work, viz

1. What is problematic for nonnative (in my case, Yemeni) readers when reading materials in English in a specialised field?
2. How do readers go about solving their problems in reading these texts?

Thus, if anything, the results of this study speak to what is problematic for advanced nonnative readers when reading in specialised English. The interpretation of results will focus on a few of the problematic areas that cut across the disciplines. As noted earlier these areas were use of specific RS, use of PI/PS strategies and amount of ideas recalled.

(a) Use of specific RS

The major difference between the two groups in the use of individual RS occurred in the frequency of use of the same strategies. The BA have shown to be more active users of the same selection of RS than the BS. This is a sign of good reading; in fact the greater use of strategies by a certain group of readers imply that they are more active in their attempt to comprehend (Olshavsky 1976-77:673). This is an important difference between the reading behaviour of the two groups. This finding does not explain why the BA used RS more frequently. The reason may be more motivation (see 7.2.2.3), higher intelligence, superior reading training or other factors. Among individual RS, the BA revealed a more pronounced sound/word-centred approach than the BS. The more vigorous use of their *question pronunciation* and *question meaning of word* strategies is a reflection of the syllabus composition of the discipline. The BA have separate courses in spoken English whereas the BS do very little or no such exercises.

(b) Use of PI, PS strategies

In assessing the impact of specialisation on the use of PI/PS, ***it must be borne in mind that this relationship has not been tested in any RS study so far.*** As a reminder I reproduce the results here

		PI only		PI+PS
BS		53%		47%
BA		17%		83%

More than 50% of the BS readers short-circuit their reading after identifying problems. Among the BA readers comparatively few (17%) show similar behaviour. All the others attempt at solving their reading problems after identifying them. Such behaviour on the part of the BS readers arise from their own constraints, eg intellectual abilities and verbal abilities. Differences in verbal ability might contribute to differences between readers in the way they report their reading strategies, even if the strategies themselves are actually similar.

(c) Recall of Texts

The third and expected area of difference is perhaps the recall of ideas. It was hypothesized that subjects reading texts in a familiar content area, that is related to their area of study, would perform better than subjects unfamiliar with the subject. The latter, it might be argued, would lack familiarity not only with content of the subject area, but also with such aspects as rhetorical organisation and linguistic relations. Another factor that was also utilised in this regard was 'text difficulty'. Again a reminder of the results is as follows:

	TASK1		TASK2	
	CR1	RC1	CR2	RC2
BS	2.7	62.8	1.8	48.9
BA	3.0	67.8	2.0	48.9

For the BS group, the component 'familiarity' worked well in that they both rated and recalled according to their rating the two texts (text easy, more recall; text difficult less recall). For the BA group the 'familiarity' component did not work in either text, in that the group rated the unfamiliar text as easier than the familiar one and equally recalled more of it (67.8% as against 48.9%, a difference of 20%). There can be two reasons for this

1. that perhaps the 'Water-circulation' topic was not unfamiliar to them.
2. that RC2 was so difficult that the familiarity component failed to work.

Linguistic proficiency would clearly seem to be one factor involved for explaining the second point. It might be possible to claim that it is only beyond a certain linguistic difficulty that more specialised background knowledge becomes more important, being used to 'top up' the amount of recall (Alderson & Urquhart 1984). In any case the BA was not disadvantaged by the use of text outside their own field of study (this was also the case in the protocols). In other words the background knowledge hypothesis for this group was not confirmed.

However, I am still left with the problem of why the Engineers did as well as the BA on RC2 (not an engineering text and considered, 'difficult'). Reading ability would clearly seem to be one factor involved. We have seen that the groups are almost equal in total assessment, therefore reading proficiency is not a distinguishing factor; they have both rated the task as 'difficult'. On the basis of these two factors, one can conclude that equal ability and equal perception of task have resulted in equal amount of text recalled, irrespective of familiarity of text.

This discussion can be summarised as follows:

	Task1	Result1	Task2	Result2		Conclusion
BS	easy and familiar	recall more	difficult and unfamiliar	recall less		familiarity & difficulty work.
BA	easy but unfamiliar	recall more	difficult but familiar	recall less		only text difficulty works.

What I need now is an explanation which combines the effects of linguistic proficiency and background knowledge so as to account for the totality of the results. Subjects have been shown to use background knowledge more often for easier material. This is consistent with Bednar's (1987) conclusion that use of background knowledge experience diminishes as reading tasks become difficult. These findings can further be explained by the idea of automatic processing in reading, which is based on the supposition that, when cognitive capacity is committed to more specific reading tasks, there is less capacity available to make associations, integrate ideas, and process higher level information (Laberge & Samuels 1974). Perhaps I can conclude from all the foregoing discussion that the BS subjects are affected by familiarity in the recall of a text while the BA seem to be more affected by text difficulty. In other words, readers who specialise in fields such as engineering are disadvantages by being tested on areas outside their own field of study whereas general readers (eg Arts) are more disadvantaged by the difficulty of the text than its content.

8.4.2 Differences according to L1 and L2

By conducting protocols in L1 and L2, the study could compare the use of RS in both languages. The findings will be discussed with relation to

a. The difference in the type of individual RS used

b. The issue of transferability

(a) Difference in the RS used

In L2 (both modes) the readers depended both on PI and PS strategies. The identification of problems, in fact, with around 50% in one group was found to exceed the solution of problems (8.4.1b). The same is not true of their reading in Arabic. Apart from the monitoring of comprehension, the only PI strategies used were *question information* and *question content*.. Similarly in their use of the PS strategies they show more reliance on content/information strategies than word-based ones. This is an

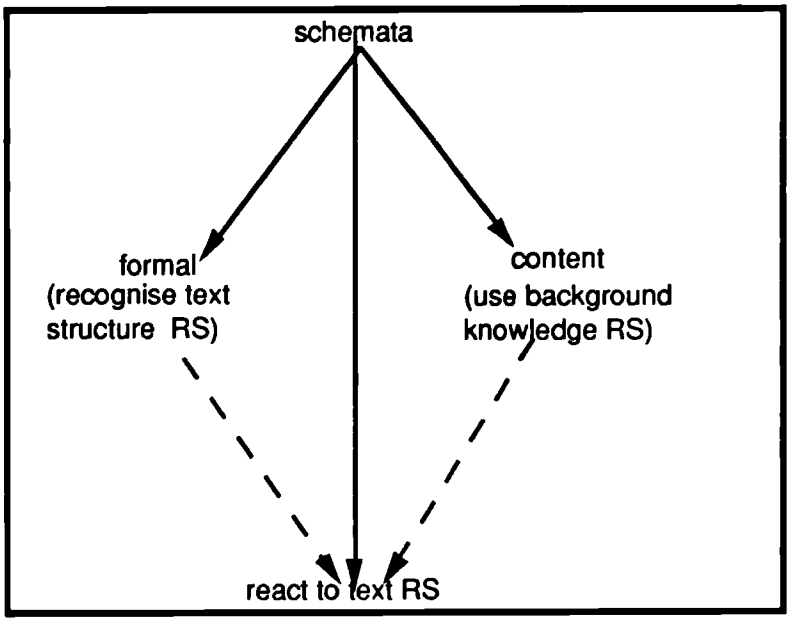
important feature of the Arabic reading. Readers made use of the following PS strategies:

	Use background knowledge	**Recognise text structure**	**React to text**
BS	74%	26%	48%
BA	72%	48%	66%

This is also in line with their own beliefs. Only 35% voted for words; the others either found problems with text structure or content. The dependence on these RS indicate that they do not only know the vocabulary of the text (because as we know the meanings of some set of number of words does not ensure that a reader will be able while reading to process these words rapidly) but also show that for these readers both top-down and bottom-up skills and strategies are well-developed and, therefore, contribute to the successful comprehension of text. In L2 the readers are more word-bound, and the meaning tends to break down at the word level. The readers in their use of the above RS in L1, in fact, reveal traits that are commonly described under the schema theory model. According to the schema theory (chapter 3), the process of interpretation is guided by the principle that every input is mapped against some existing schema and that all aspects of that schema must be compatible with the input information. This principle results in two basic modes of information processing, bottom-up and top-down. Since subjects questioned less of content and more of information, it means that they did have some prior knowledge of the content area, in fact enough to react to the writer's ideas of that content area, and in trying to relate their interpretations continuously to the rhetorical, organisational structures in the text, the picture within these readers of the schema model looks complete.

Figure 8.A

The schema -theory model in Arabic reading.



Again another important feature in Arabic reading is the limited use of overt RS. Although the subjects were not observed reading Arabic in a classroom situation, the findings from their questionnaire responses are as follows:

	Use references	Seek assistance	Summarise	Reread
Arabic	**25%**	**47%**	14%	14%
English	**61%**	20%	5%	14%

The reliance on *use of references* RS in their reading of English texts more than in reading Arabic is yet another indication of where the learning of a language other than the L1 entails resorting to all possible resources in order to get meaning.

(b) The issue of transferability

The issue of transferability in reading cannot be ignored when one comes to compare the types of RS used in L1 and L2. Research in SL has attempted to determine the

extent to which the psycholinguistic perspective of L1 reading can explain L2 reading behaviour. According to Hudson (1988), data based research has supported this psycholinguistic concept of reading universals (Goodman 1971) and, in fact, (Rigg 1977) has found considerable similarity in reading miscues for ESL learners from a variety of language background. However, in later studies, Clarke (1979) found that a language ceiling in L2 effectively prohibit the complete transfer of L1 reading skills to L2 reading. The results of his study suggest that although, the psycholinguistic assumptions of universals may be justified, the role of language proficiency in L2 may be greater than has previously been assumed by L2 researchers interested in the psycholinguistic perspective of reading. Thus a 'short circuit' in the good reader's system is caused by a limited control over the language. Cziko (1978) suggests that syntactic, semantic and discourse constraints serve as important sources of information for the fluent L1 reader and much of the difficulty in L2 reading may be due to an inability to make full use of the constraint because of low language proficiency.

Another line of argument related to transferability is available from studies of bilingualism. These studies (eg Cummins 1976) lend support to the belief that poor FL reading is essentially a reading problem. However, the results of some of these studies are conflicting (see Alderson 1984).

In this study considerably low correlations were established in the use of RS in L1 and L2 for both groups, supporting the results of the 'short circuit' studies. On the other hand, the absence of the use of strategies such as *guessing* and *inferencing* in the PA and their very limited use in PE is a clear reading problem. Another RS that seems to be the property of L1 reading only is the *recognise text structure* RS. Previous research, exploring the relation between reading comprehension and awareness of the text structure, has suggested that poor readers are less likely to be sensitive to passage

structure either in recall or in stated awareness (eg Meyer, Brandt & Bluth 1980). In other words, text awareness is a sign of good reading.

Therefore, on the basis of this I can conclude that

1. The low correlations indicate that subjects do not approach reading in exactly the same way in their L1 and L2. This may be due to their proficiency level in L2, and familiarity and/or difficulty of L2 text.
2. The very limited use of certain strategies in L2 and, which are not present in L1 reading, or the absence of certain in L2 and, which are present in L1, lend some support to the bilingual studies. This has been described by Alderson (1984:2), commenting on Jolly, (1978) as

> students who fail to read adequately in the FL fail because they either do not posses the 'old skills' or because they have failed to transfer them.

8.4.3 Differences according to reading proficiency

The use of RS can also be affected by the reading proficiency of the subjects. By taking the top 25% (scores ranged from 67% to 81% with a mean of 71.7 and sd 4.4) of the group and the bottom 25% (scores ranged from 50% to 35% with a mean of 45.7 and sd 5.3) a comparison was drawn for the type of RS these subjects use. In their use of the PS and PI strategies the two sets of readers revealed the following traits

	Good readers		Poor readers	
	PI	**PI+PS**	**PI**	**PI+PS**
Minimum	0.0	0.0	0.0	0.0
Mean	8.6	4.7	11 0	1.3
Maximum	17.0	13.0	15 0	6.0
Sum	129.0	71.0	165	20.0

There was a positive correlation between proficiency in reading and the type of RS used, though it did not reach significance at .01 level, (r= .1977). This relationship indicates that good readers tend to be influenced by their reading proficiency in the type of strategies they employ. They read actively trying for solutions of problems as they read on. Again, as in the case of specialisation, the tendency with the good readers is that they use the same RS but much more frequently than the poor reader. This is in line with most research on such relationships (eg Hare & Smith 1982, Olshavsky 1976-77, Bednar 1987). It must also be pointed out that good and poor readers were reading the same material; the reading tasks were, therefore, much more difficult for the poor readers than they were for the good readers. According to Afflerbach and Johnston (1984:314),

> extremely difficult texts may cause overloading of the subject's processing system and cause complete or near-complete breakdown of the comprehension process
>
> (quoted in Klietzen 1991:70)

It therefore seems that the poor readers were reading at this 'extremely difficult' level whereas the good readers were not.

The differences may also be related to their ability or willingness and also their persistence in trying strategies even when they are facing difficult or unfamiliar material. There are many possible explanations for the differences in ability (or willingness) to regulate strategy use. Some reasons may be embedded within the person variable of the metacognitive framework (for learner variables see also 2.8). According to Johnston & Wingrade (1985), poor readers' failure to use RS could arise from affective factors as well as from cognitive problems. A subject's concept of his/her own reading ability might affect the degree of risk the subject decides to take in attempting to read something difficult. Subjects who see themselves as not being capable may give up, thinking that they cannot succeed at a reading task. For these students, not trying at all may be more acceptable than trying and failing (Klietzien

1991). Their self-esteem may have affected their approach to the task. Similarly, McCombs and Whisle (1989) suggest that students, as they approach a task, evaluate their perception of its requirements against their own sense of values, needs and competence. They then form outcome expectancies for success or failure. The result of these processes, if positive, leads to positive affect (eg confidence) and motivation to approach the learning task and to put in the effort and persistence required to succeed in the task. On the other hand, if their evaluations are negative, negative affects (eg anxiety) will result and the basic motivation will be to avoid the learning task . Another factor, also related to the person variable that could explain difference in strategy use/regulation is the degree of achievement responsibility, or belief that the readers' efforts can affect his/her success. If readers feel that they have control over what happens to them in an academic situation, they will be more likely to attempt to use strategies to compensate for difficulties they encounter. On the other hand, if readers feel that their competence depends on the text or on the teacher, they are less likely to try to utilize any strategies that they may know.

In sum then the results seem to show that good and poor readers know and use the same basic strategies but that the good readers are more flexible than poor readers and have greater control of RS use, are able to vary their use of RS when appropriate and are more willing to preserve even when the task is difficult.

8.5 Consistency and diversity in RS' use across the design.

And a final point on the statistical findings is the issue of consistency in the use of RS across the design. Using triangulation with the possibility of tackling the RS issue from various angles has provided me with the opportunity to assess what readers do when reading a text on their own in L1, L2 and in classroom situations. The relationship between L1 and L2 reading has already been pointed out . Here I intend to explain why subjects behaved in the way they did. Subjects appeared somewhat

sensitive to task demands; they partially adapted their strategy use to the difficulty level of the passages and to the language they were reading in. For example, it was noticed in their protocols that even the voice quality changed the moment they shifted from reading English to reading Arabic.

The question whether different RS are used due to the different modes can be only answered with some caution by this study because tasks were confounded with specific characteristics, especially the classroom texts. In general, subjects used a broad context to construct an understanding in the observation mode, focussed more on background knowledge and text structure in the PA mode and concentrated on the word base in the PE mode.

Having provided an explanation for the numbers I now move on to the models.

8.6 The Yemeni readers' reading procedures and the models

It was hypothesized (ch 3) that the Yemeni readers follow a decoding model of reading, and that besides trying to confirm this hypothesis, the empirical research will also try to investigate if the readers employed strategies based on the psycholinguistic as well as the interactive models. In other words, the question boiled down to how do the Yemeni readers make sense out of the printed page? Through the 24 RS employed by these readers in reading English and Arabic texts, making sense can be defined in various ways. For some readers, making sense of a passage means being able to question linguistic codes as well as question content/information. For others, it means being able to extract the main idea from the passage. For still others, drawing inferences from what is read is the hallmark of comprehension. Actually, as is well known, comprehension includes all of these and more. It also includes the ability to integrate already existing knowledge with what is being read. Some of these strategies

have shown to discriminate between BS, BA readers, good and poor readers as well as L1 and L2 reading.

In my elaboration on the various RS in the previous chapter, I have tried to explain that the solution of a problem depends solely on what for a readers posits itself as a problem in reader-text interaction. That the problem-identification has been mainly on word and to some extent on the content levels has further been consolidated in the strategies these readers use in their solution of problems. Yet the picture that emerges from the findings is not a simple one. For example, it will be surely inaccurate to place all the Yemeni readers within one single model. Abstract models of the reading process in general are models of the ideal, completely fluent reader with completely developed knowledge systems and skills; whereas the SL reader is, almost by definition, a developing reader with gaps and limitations in both these categories. Let us, however, examine the Yemeni readers reading with reference to the three models outlined in chapter 3.

8.6.1 The decoding model

In their ninth or tenth year of learning English, the readers in this study show a general pattern of reading behaviour, irrespective of their specialisation or proficiency level. Among the most prominent design of this pattern is their tendency to tackle the text at word-level. This pattern is what has been described in the reading literature as 'bottom-up', or an over-reliance on text-based processing (Fillmore 1981). The text-based processing of a text involves decoding the individual words and their lexical meanings and decoding the syntactic structures of each sentence and their grammatical function. This is called E-0 level of processing (see ch. 3). What causes such unidirectional biases in text processing in reading among the Yemeni readers or in readers of similar backgrounds, or in SL readers in general? It is difficult to find an answer to this major question with certainty. The cause will be discussed with reference to

a. theoretical orientations and concepts

b. linguistic deficiencies

c. reading deficiencies

d. schema availability or activation

(a) Theoretical orientations and concepts

The concept or misconcept of a reader in this study has been described as the readers' theoretical orientation, and these orientations have shown to influence comprehension. Readers have been shown that they are guided by the concepts they have regarding reading in a SL. For example, readers who believe in a word-centred approach, focused their attention on the print and tried to decode every word in their attempt to understand a piece of text. This proved to be the pattern with the majority of readers. The underlying reason for this behaviour has to be explained in the context where reading is taught and learnt.

The theoretical concept of a reader is the result of the instruction in reading he is exposed to. If readers are instructed right from their early years of learning the language that the most efficient way of getting meaning out of a SL text is to tackle the vocabulary, and if this behaviour is consolidated over the years by similar methods, then vocabulary is bound to be the most salient feature of a text for these readers. Such approaches to the teaching of reading breed a certain prototypical behaviour in readers who then become over-concerned with such units as sound, words and phrases. Even after leaving school and joining college, when reading in SL becomes more self-dependent than teacher-dependent, the trend of word-boundedness continues. Monitoring of comprehension remains greatly related to understanding of words and phrases. In other words the teaching of reading contributes in no small measures towards the beliefs readers hold. In fact, the effect of instruction on the use of RS has

been pointed out by many reading analysts (eg Alderson 1984, Carrell 1988, Klietzen 1991). In his conclusion Klietzen has clearly raised the issue

> Further research needs to address development issues, such as at what point [.....], and whether strategy use is the same for all students at the same level or depends on the reading instruction they have received.`

(p. 83)

In their reading lessons teachers, as experience and the observation sessions have shown, usually start by explaining the difficult words in a text. Teacher explanations of reading lessons are vocabulary explanations. In their effort to make themselves, (or the words understood), teachers usually resort to the first two of the four following procedures:

1. Immediate association: Here the teachers use an object, picture or BB sketches to make word-meaning explicit to readers
2. Translation: Where method 1 proves futile translation is a favourite substitute, especially with abstract words and phrases
3. Definition: It is one of the ways in which a word is usually explained, though most teachers consider it a waste of time and effort to try and explain a word by using a number of other words.
4. Context: This is a very rarely used method of explaining meaning of words.

If we now consider the RS used by readers in reading texts on their own (the protocols) or in the classroom with others (the observations), it becomes clearer why, for instance, the overt strategies are the features of classroom reading, and why when the opportunity is not there to resort to these RS, reading is terminated after identifying the problems.

(b) Linguistic deficiencies

The important role of language competence in English for successful ESL reading is too obvious. Clearly text-based processing cannot take place at all without appropriate skill levels in decoding the syntactic structures, and particularly as is shown in this study, the content vocabulary of a reading text. Part of the problem, no doubt, can be attributed to the text itself, for whatever the reading process, the reader must engage with text, the second element in the interaction, and a considerable body of research exists which has examined the text in detail and related its nature to the reading process. Particular attention has focused upon those features of text that cause difficulty to readers. In this study lexical difficulties of the English protocol text seemed greater than, for example, syntactic or content difficulties. This is in line with Alderson (1984) who reviews research with FL readers which suggests that the lexical and conceptual difficulties of texts are greater than the syntactic difficulties. A readability study for my protocol text, in fact, when subjected to the Fog Index Formulae (referred to in Urquhart 1984) interpreted it as difficult. Since the aim from the text was to set problems in order to tap the RS used in solving them, the readability formulae has not much place in the discussion. It has also been emphasized (Alderson & Urquhart 1984) that

> readability studies result in indices of difficulty and do not claim to be indicative of causes of difficulty: that is, if one applies a readability formulae to a text, finds it too difficult for a given audience, and then manipulates the text to shorten sentence length and remove long words, it will not necessarily follow that the cause of difficulty has been removed: the text might actually have been made more difficult, although the readability index would be lower.
>
> (Introduction p.xxii)

Having pointed that out, the problem of language still remains. There is no doubt about the linguistic problems of the readers in this study. At least 50% of the readers have been designated as 'poor' readers and the awareness of their standard is also pointed out by some, as the following comments reveal

S20: *Most of the time we can't answer (reading) questions because of our weak English*

S46: *The language is too difficult for me to understand on my own.*

S48: *The lesson is very difficult to understand; the article is above our standard.*

These are instances of what has been termed in reading literature as 'linguistic ceiling,' 'threshold level' or 'short-circuit hypothesis' (Carrell et al 1988). According to Goodman (1988) readers may short-circuit in a variety of ways for a variety of reasons.

> In general, readers short-circuit when they can't get meaning or lose the structure; when they've been taught or otherwise acquired non-productive reading strategies; or when they are not permitted to terminate non-productive reading. Theoretically, a short circuit can occur at any point in the process. [.....] I suspect that many of these short circuits result from instruction.
>
> (p. 20-21)

As regards the threshold hypothesis, Cummins (1979) points out that the threshold cannot be defined in absolute terms, but it is actually likely to vary depending upon the demands being placed upon the learner by any given task; the more demanding the task, the higher the threshold is likely to be. Alderson (1984) adds that the threshold is also likely to vary with the stage of cognitive development of the learner, and with his level of available background knowledge. This leads us to the other type of deficiency, ie reading skill deficiency.

(c) Reading skill deficiencies

For those readers who face very little or no problem with the language the deficiency can be described as a reading skill deficiency. Among my subjects are those who know all the words and grammatical structures of a sentence or paragraph and yet cannot comprehend what they have read. It is the result of learning the elements of the language without understanding the process which one utilizes to communicate with

these elements, a case of linguistic competence versus communicative competence (Hymes 1971). The following readers are clear instances of this phenomenon

S1: *I understand all the words but I don't understand what mean by these words*

S60: *Is clear for its words but I don't know the main idea about it.*

(d) Schema availability and/or activation

Yet another cause of over-reliance on the text in comprehension is the absence of relevant knowledge structures to utilize in top-down processing. If the schemata do not exist for the reader they cannot be used. In the English protocol text this can be detected as a general pattern among all readers. The best example of schema availability comes from the readers' effort in trying to make sense of the phrase 'the stress man' which proved a potential problem area. The following examples should make this point clear

S2	The stress man I feel is an important, has an important part in the process as to give good information and this would result in better design.
S5	The meaning is clear; there is a certain idea which is concentrated talks about the stress man.; if I understand this meaning I understand this paragraph.
S14	The exact meaning of the stress man?
S33	I can't understand what is the job of the man.
S38	It is about a man his function is he takes account of unusual stress; he called the stress man and it is clear.

S39 There is a thing, special call the stress man, I don't know what it means.

S40 In this paragraph I don't know what it means because I know the word 'stress' gives the pronunciation, but in this case I don't know.

S45 One of the workers in the plane called stress man; he takes account of the aeroplane and make the damage and tell the designer of the part he is wrong and the designer [not clear] it and told it is necessary.

Schema availability alone is not a sufficient condition for adequate comprehension. Relevant schemata must be activated (Carrell & Eisterhold 1988) although the process by which schemata are activated are not well understood. The following examples can be considered as cases where the activation of the right schemata seems to be the main source of problems for the readers in trying to make sense of the 'structural tests' in the English protocol.

S35 It's not very clear but specially when he says the first one of the first three what does he mean? the part of the aeroplane, not very clear, two will be destroyed, number two or what? not very clear.

S27 It's not that clear here in 'two will be destroyed in the structural tests' it doesn't seem like something like an aeroplane because we know that aeroplanes flying in the sky not on the ground.

S38 I can't guess what does he mean by saying 'one ..... be flown'.

S42 I think two will not always will be destroyed, I see some of the aircraft ...[incomplete]

These examples on schema availability and/or activation reveal a potential source of reading difficulties, ie the reader has a consistent interpretation of the text, but it may not be the one intended by the author. It has also been termed as 'schemata instantiation' (Anderson et al 1976)

> Instantiation refers to the particularized representation of the general abstract and stereotypical schemata which the reader brings to task. [.....] The reader is involved in a process of constructing a correspondence between the relevant schemata and the givens or knowns of the message. The ingredients needed to fill the slots will not always be found in the message itself, but may be reader supplied. As the correspondence is constructed the reader gains a sense that the message in the input has been and is being comprehended. When the slots of the schemata are filled with enough particular cases, a schema is said to be instantiated.
>
> (Hudson 1988:187)

Therefore, in the above examples, as they try to make sense of their reading, readers rely on potential lexical knowledge (their main forte) trying to draw inferences. In doing so they demonstrate lack of procedural knowledge in that they draw on irrelevant knowledge sources or combine cues from various linguistic levels in an unfortunate way, eg S40 who relates 'stress' in 'stress man' to 'pronunciation, or S35 who is totally puzzled *'two will be destroyed, number two or what'*? When such behaviour fails to provide them with further confirmation or responses from within the text they tend to give up. These are instances where comprehension of a message entails drawing information from both the message and the internal schemata until sets are reconciled as a single schema or message in which the constraints of both the graphic message and the internal schemata are satisfied

These could be the main reasons for the Yemeni readers' reliance on text-based processing.

8.6.2 The psycholinguistic model

Goodman's (1967) model of reading as a 'psycholinguistic guessing game' in which the 'reader reconstructs, as best as he can, a message which has been encoded by a writer as a graphic display' (1971:135)) does not seem to be working with the Yemeni readers. Goodman views this act of the construction of meaning as being an ongoing, cyclical process of sampling from the input text, predicting, testing, and confirming or revising those predictions, and sampling further. We have seen (chapter 3) that in his model the reader need not use all the textual cues. The better the readers is able to make correct predictions, the less confirming via the text is necessary, that is, the less visual perceptual information the reader requires.

The two major strategies that this model is based on are *guessing* and *predicting*.

The use of 'guessing' has been found to be totally absent in L1 reading, and very low in the English protocols as well as classroom reading. In their assessment of the cloze task completion, one should be reminded, only 12% (6 in each group) admitted using *guessing* as a strategy. Being text-bound and inefficient to read without the help of textual clues, the readers in this study confirm the belief that reading problems are also attributed to imperfect knowledge of the language as well as L1 interference. In Yorio's (1971:108) words

> The reader's knowledge of the foreign language is not like that of the native speaker; the guessing or predicting ability necessary to pick up the correct cues is hindered by the imperfect knowledge of the language; the wrong choice of cues or the uncertainty of the choice makes association more difficult ; due to unfamiliarity with the material and the lack of training.

These deficiencies put forward by Yorio place constraints of various types on the way the SL reader processes the text. It is these constraints that explain why most readers completed some cloze items in the following way.

Example 1

You would never	**call**	boxing noble
	like*	
	seen*	
	acquire*	
	watching*	
	prefer*	

Example 2

As a means of making	**a**	living
	high*	
	short*	

Example 3

To think that a man	**has**	been prepared
	who*	
	have*	

*= unacceptable responses.

This is true of those who cannot or do not guess. However, there are those readers who do use *guessing*. For example, S32 has used the strategy twice but in a similar way

S32: *I think this last word 'dependable" is from 'depend', if I am not mistaken*

He provides a similar response for 'navigational'.

S15 is a different type of guesser

...the word 'reliable' may be means 'strong'

Then there are readers who admit their inability to do so

S38: *I can't guess what is its exact meaning.*

As for the other RS, 'predicting,' (ironically enough, one of the lessons I observed was entitled 'Predicting') it was clear from my and their own self-observations that it was a RS most readers were not familiar with.

S34 : *Predicting is a new word for me*

Those who showed knowledge of the word, came up with suggestions like my guesser, S32, who observed that it

> [..] *should be another title.* His suggestion *guessing words*

The reliance on textual clues was obvious as S42 said

> *When I saw the picture about the nurse, how can I predict the missing words in the rhyme*

Again others expressed the real concern with the RS

S35: *Predicting is something more complicated in its real meaning than we found in the text*

These examples indicate that there are readers who are aware of strategies such as *predicting* but that they fail to use them.

8.6.3 The interactive model

My last model was the interactive one. Throughout my research I have been drawing comparisons between RS and CS, in their classifications, their categorisation and their explanation and therefore I have never been very far from the notion of reading as communication. The model (Widdowson 1984b), we have seen, builds on the perceptual cycle (characteristic of the Goodman model) but puts equal weight on linguistic clues. The language user, however, does not

> deal with text as linguistic data [....] but as indication of communicative intent.
>
> (p. 87)

In other words the model gives equal importance to the textual clues.

> If the actual reader is prepared to play the role that the writer has cast him in, then he will seek to recover the underlying discourse from the textual clues provided.
>
> (p. 90)

Two types of readers are described in the model, the submissive and the assertive and it is their characteristics that are important here. The submissive reader, recognising the authority of the writer and wanting access to the information given, adjusts his own frames of reference to accommodate it. He then allows himself to be directed by the writer and be content to keep to the course that have been plotted for him. He follows the text like a script. The assertive reader, on the other hand, is the one who may not be willing, or may not be able to accommodate the writer's conceptual scheme into the pattern of his own life space. Instead of adjusting his scheme of things to accommodate that of the writer, he projects his own scheme on what he reads and changes the direction of accommodation so that the text is adjusted to fit the patterns of his own significance. Further according to the model, the reader has to take position that suits his purpose on the dominance/dependence scale (Argyle 1970), asserting his own scheme at one point, submitting to that of the writer at another using text as a source of information and as a script of discourse.

If we now consider the Yemeni readers with reference to this model the following picture emerges. The position the readers take as they read English texts can be described as submissive, with a few readers showing signs of assertive reading. In the following examples from the English protocols, S11 (in both his examples) and S35 can be described as assertive readers, while S21 and S25 are clearly submissive readers.

S11: I can't understand that only two of the test structure will be carried on the ground

S11: The first test is so clear but the second test I can't understand the purpose of it for fatigue strength.

S35: It is clear but there is something with the designer, if it say the designer of the plane it make it more clear and I think it is something known that it should be calculated every part that it showed how much it will bear.

S21: The writer here says about the performance that one should take care about it , is clear.

S25: We know that the aeroplane cannot stop in the air if something is go wrong in it which make it a matter of life and death.

In their reading of the Arabic text the readers show more dominance than dependence. The following are all examples of assertive reading

S6: [...] but it needs some explanation for some terminology, that is, in the content white and red blood cells and their role in protecting the body from disease.

S11: [...] and we find that the breathing rate is the same at work and rest.

S23: Here before talking about anything especially in the field of medicine it must be that the topic should be defined bringing out the symptoms [...].

S35: [...] It is surprising that there is no mention of the role the heart plays in all this especially at old age.

S43: It talks about [.....] . I don't think this is the case only with old people; there may be young people as well whose respiratory system may be affected because of illness.

What seems to be happening in all these examples is that when the text keys in closely with reader prediction, assertion is encouraged. When the text becomes unpredictable (linguistically in L2 than anything else), the reader succumbs to the writer's discourse.

These predictions are different from the ones referred to earlier in the Goodman model. They are what Sanford and Garrod (1981) call 'scenarios'

> The scenario is an information network called from long term memory by a particular linguistic input.
>
> (quoted in Widdowson 1984b:92)

The schema, then, like a scenario is said to be projected on to events which are interpreted with reference to it. Therefore, following Widdowson's (1984b) notion of reading as a 'perceptual cycle' (p.93) the reader applies a schematic frame or scenario to the textual object, samples the information it represents, and makes whatever modification is necessary to incorporate information not previously accommodated into the structure of his knowledge. Complications arise when the object to be sampled is itself schematically organized and so represents a structural order which the reader has to reconcile with his own. Little sampling is required when the two orders are similar enough to make them congruent. Where they are different, the reader may choose to sample the text to make minimal modifications, thereby asserting the primacy of his schema, or may feel the need for major schematic modification and in this case the sampling will take the form of a submission to the writer's discourse, of which the textual object is a realisation.

I think that this cooperative/self-assertion dichotomy and the dominance/dependence scale as presented by Widdowson does not quite explain the L2 reading behaviour of the Yemeni readers. As has been pointed out (Alderson & Urquhart 1984) it is not a simple equivalent to an active/passive one. The core of the model is apparently background knowledge and schema of the reading material. It is only when the reader possesses enough of these or when he approaches the text with 'the ideational matching of frame of reference or scenarios' (p. 92), he can be described as a reader in this interactive model. It certainly describes the L1 reading behaviour of my readers, as we

have already seen earlier. But meaning in L2 for the Yemeni readers lies in the linguistic codes first and only then in the information provided.

> Because we can see only what we know how to look for, it is these schemata (together with the information actually available) that determine what will be perceived.
>
> (Neisser 1976 p. 20, quoted in Widdowson 1984b:92)

Therefore, as regards to the three models, the Yemeni reader's L2 reading can be described as closer to the decoding model than the other two. Their L1 reading, on the other hand, is more in line with the Widdowson model. The Goodman model fails to account for their reading behaviour in either language. Any reading model that one can propose for the L2 reading of the Yemeni readers should, therefore, build on the basis of the two models that manifest themselves in either language since it now seems safe to conclude that it is difficult to accommodate the variety of perspectives on comprehension within one of the above models. Consequently, I need to emphasize that when I say that their reading behaviour can be described in the decoding model, this may sound biassed towards word level processing and may not generalise to sentence or other text level processing. The readers in my study use much ineffective processing, as stated throughout my discussion and exemplified in their PE, notably bottom-level type, as well as giving conflicting evidence in their use RS such as *react to text.*. Moreover, even my good readers show traits that are not generally acknowledged in L1 comprehension like for instance recognising text structure.

Having said that there are differences between L1 and L2 comprehension, my proposed L2 model for the Yemeni readers builds on their L1 comprehension model, which in turn is based on the schema theory model (similar to the Widdowson model), and yet not departing very much from the type of reading they presently adopt. This is because I believe in a gradual build-up of any new approach to reading, a model that can account for readers in all specialisations and for good as well as poor readers at the

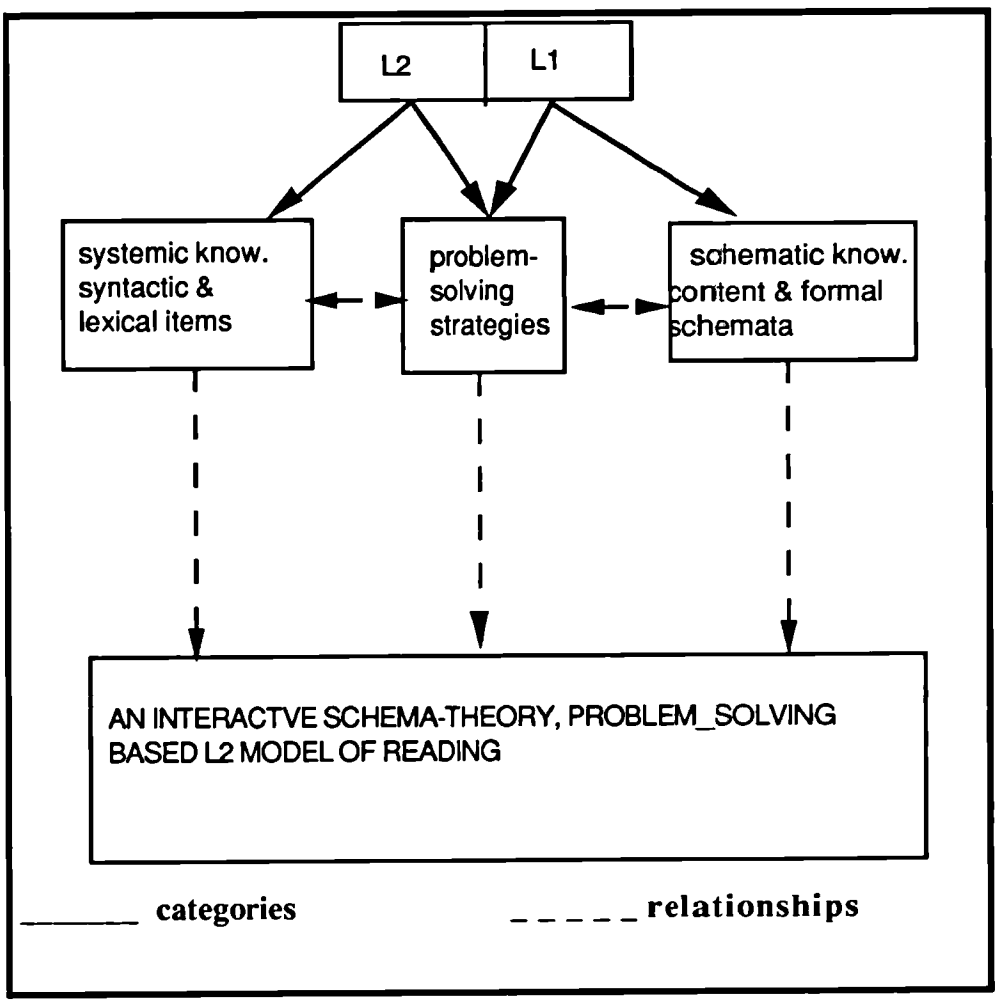
tertiary levels. I will refer to this model as an interactive, schema-theory, problem-solving based (ISPS) model.

8.7 The components of the ISPS model

An interactive schema-theory problem-solving based (ISPS) model of reading for the Yemeni readers is balanced to accommodate the theoretical consistency and the practical appropriacy. The three components of the model are systemic knowledge, (which draws from their L2 reading), the schematic knowledge (which is based on their L1 reading, see Figure 8.A) and the problem-solving component. (my defining criterion of a strategy, see Figure below)

Figure 8.B

A model of L2 reading for the Yemeni readers



The systemic component will allow the one-way, bottom-up trend in text-processing on the part of the L2 reader due to his undeveloped systemic knowledge and also to the type of model of language teaching/learning that is adopted in SL classrooms. This component will account for the syntactic and lexical units at different levels which will help the reader to instantiate schematic knowledge. Widdowson's model, I assume, takes for granted some sort of systemic competence on the part of the reader. In my model, though text processing is to occur interactively, linguistic competence is not to be taken for granted

The function of the schematic component is to do with the kind of knowledge the reader already has, ie his knowledge of the world (content schemata) and of the rhetorical conventions (formal schemata) as realised in L1 reading. That is to say that the SL reader is aware of this in L1 is very much to his advantage and is in fact to be fully exploited in this model. As Haastrup (1991:126) puts it

> If one ventures into unexplored territory it seems wise to lean on more established theory building.

Thus the systemic knowledge, through appropriate teaching and material planning (I elaborate on these issues in the following chapter), can make the schematic knowledge easily accessed. This second component will also help the reader to counter balance his/her lack of systemic knowledge. Therefore, to understand the text the reader relies on the correspondence between the structure of the text and the structure of the world (Lopes 1986).

Thus according to the model, in interacting with the text, using the two components, the reader is in a better position to solve his/her reading problems using PS strategies. This, the problem-solving aspect, is the third component of the model. The reading

process in this study has been investigated within ***a problem-solving framework, using problem-orientedness as a basic criterion in strategy identification and classification and PS strategies as basic solutions.*** This problem-solving component is essentially founded on the Piagetian idea,

> that any learning situation should present something which is problematic for the learner, and which will make him strive for comprehension. This is in fact how human beings typically proceed in making sense of the world around them.
>
> (Lopes 1986:166)

The model thus encourages this idea of posing problems for the reader and offering, at the same time, clues to solve these problems through the use of PS strategies.

8.8 Summary

The focus of the chapter has been to explain the reading procedures of the Yemeni readers within the three models described earlier and to comment on them and their values. From the statistical findings it seemed certain that the readers in this study are text-bound. The reasons for this has been explained using the decoding theory of reading, though some conflicting evidence came from the better readers. Their L1 reading behaviour was found to be very much in line with the schema-theory model. Therefore, on the basis of the statistical evidence and the explanations given, a model of reading has been proposed for the Yemeni readers. Drawing from a number of sources such as the systemic and schematic components of the interactive model, as well as the notion of communication put forward by Widdowson, and adding a key problem-solving element, the ISPS model aims at providing a guide-line for the reading instruction (RS fostering) and material selection for the tertiary readers in the Yemen. The implications and the application of all this form the basis for the next and final chapter.

CHAPTER NINE

Implications and Applications

9.1 Introduction

The principal purpose of this study was to provide a detailed analysis of the reading strategies used by SL readers at tertiary levels as they read textbooks. The question was, if effective reading results from selecting certain clues necessary which clues guide the Yemeni readers reading? What are their reading problems and how do they solve these problems? In other words, what are the strategies they deploy to reach their reading goals? The answer to these questions could lead us, teachers and researchers, to understand the process of reading and to improve our teaching of reading at the tertiary level classroom where most of us deal with reading in the traditional teacher-centred manner, ignoring the learner/reader's role and involvement with the process, which is essentially his/her own. There were thus three aims from the analysis

(a) to provide a detailed understanding of the RS use of a group of Yemeni students

(b) to throw light on SLL theories on which this study is built, viz reading and strategies

(c) to provide recommendations for the development of reading instruction for the tertiary level classrooms.

The first aim has been the focus of the preceding chapters. In this chapter I first evaluate the implications of the findings for theory and for the methodology of such research. In the second part I consider the feasibility of teaching RS and set some recommendations that might make the operationalisation of the findings possible.

The chapter does not attempt to draw conclusion or to finalise the research which has been undertaken. It attempts, instead, only to draw the reader's attention to some of the

possible implications of the findings. It also suggests certain areas of inquiry which might shed light on the nature of the reading process.

9.2 Evaluation of theoretical and methodological approaches

9.2.1 Theory

This study is part of a growing emphasis on process rather than product. Unlike traditional research practices, which emphasized product in the form of the right answer and the desired terminal behaviour, this approach is more interested in ways in which readers approach the problem. The focus is on the process of reading so that the emphasis is on **how** the text is comprehended rather than on **what** has been comprehended. Such studies build on the assumption that individual readers read in different ways and may use a variety of strategies at different times, depending on a range of variables, such as the nature of the reading task, motivation, levels of proficiency and reading situations, and that the more informed readers are about LL the more effective they will be at managing their own learning/reading.

Such reading approaches aim at helping readers take on more responsibility for their own reading for two basic reasons:
(a) reading can be more effective when readers take control of their own reading
(b) those readers who are responsible for their reading can carry on reading outside the classroom.

The value of concentrating on process in research in reading is that if we can characterize the processes, we may find elements that are general across different readers. The basic rationale is, therefore, that an understanding should lead to the possibility of distinguishing the processing of good and poor readers. This, in turn, should lead to the possibility of teaching the strategies or 'process components' (Alderson & Urqhurt 1984) of good readers to poor readers or, at least, making them aware of the existence of other strategies which they wish to try for themselves.

The theoretical orientation of the present study has its roots in the strategy studies and reading theories. The literature presented in chapters two, three and four on strategies, reading and reading strategies respectively have pointed out the similarities and differences that exist in the studies on LS, CS and RS as far as definitions and taxonomies are concerned. This was achieved by examining the concept in learning/communication theories and reading models. The concept of the strategy as attempted in learning theories, for example, is not always the same. This is due to the inconsistency and vagueness in the criteria set which results in the means by which taxonomies are established. Studies by Naiman et al (1978) O'Malley et al (1983, 1985), Oxford (1990), O'Malley & Chamot (1990) are examples of such studies that have rather ambiguous definitions, uncertain criteria and endless strategic behaviours and sub-behaviours. The approaches adopted in CS, especially by Faerch & Kasper (1983b) and Bialystok (1984) seem more stable. Here although taxonomies are boundless they are based on criterion-based approaches. The RS studies come between these two extreme, in that they tend to bring in at least one criterion in their definitions of a strategy. The works of Olshavasky, Hosenfeld and Cavalcanti (see also Chapter 4) show awareness only of 'problem-orientedness'. However, in the Block study even that is missing. Although all these studies deploy the verbal protocols and think-aloud procedures (underlying which is the assumption of 'consciousness' and awareness) the criterion 'consciousness' is not given any explicit consideration. This is, perhaps, because problems are easy to define, detect and analyse; however, the same cannot be said of 'consciousness'. The present study ventured to work with both these criteria in its pursuit of relating RS to CS. It, therefore, serves as a link between LS, CS and RS, especially between CS and RS, and provides a complementation to points missed in both the problem-solving theories with respect to the reader-text interaction aspect and to the strategy theories which have been inconsistent in their approaches to communication processes, specially in reception. Consciousness in the present work has been referred to as the awareness on the part of the language user that a problem is there and therefore a strategy is being deployed.

> If the individual experiences a problem in reaching a goal, this implies that he is conscious about there being a difficulty
>
> (Faerch & Kasper 1983b:34)

Consciousness is, no doubt, a matter of degree and consciously employed plans are the controlled processes, or what is often considered as breakdowns of automatic processing

> Sudden breakdowns of automatic processing such as when the learner is faced with problems in reception or production due to lack of relevant [ ] linguistic or other knowledge often initiate attended processing, eg the use of communication strategies.
>
> (Faerch & Kasper 1987b:12)

The 'attended processes' have been referred to in this study as the presence of consciousness on the part of the reader and were available to the introspective reports.

Problems are cues for strategies and thus identifying problems is a necessary prior activity. Overcoming problems of reading is not only the motivation for strategic behaviour among readers; it also offers evidence from which we can gain insights into learning. Therefore, RS, as overt behaviours, offer

> 'windows' on the covert cognitive behaviour of the learner, giving clues as to how the learner is thinking and coping.
>
> (Faerch & Kasper 1983b:xi-xii)

RS not only serve to overcome problems readers face but are also used by them to create the conditions for intake; the choice or even the availability of certain RS are influenced, as we have seen, by a variety of factors. Of these factors, the context in which the reader has learnt his SL seems particularly powerful (see also 8.7a). Apart from the past or present learning context, the reading context will also influence preference for certain RS. The reader's communicative experience and his assessment of the situation, as in the case of CS, (Chapter 2) determines his choice of RS. It will

be an important task for future research to establish a typology of RS in terms of their potential success.

Coming to the taxonomies, then what do we want our taxonomy to be and what do we want it to do for us? This is the question, as Kellerman (1991) clearly emphasises, of importance in the study of strategies. A taxonomy of RS based on an analysis of linguistic structure (eg Olshavsky 1976-77, Block 1986) would be quite satisfactory as far as a linguist is concerned. But for researchers and teacher trainers like us, interested in the way SL are acquired and used, and interested in potential classroom applications, a more obvious concern would be the psychological process underlying those strategies. Taxonomies, as we have seen, are found at the functional level rather than the theoretical level of the strategy studies and concept definitions (2.3.1b). The common ground between the LS/CS and RS taxonomies is the binary-division line, learning/communication, cognitive/ metacognitive, direct/indirect, problem-identifying/problem-solving, word-related/clause-related and so on. Not all of these are based on rigorous empirical research.

The taxonomy of RS in this study is also binary and has its limitations too, in that it tends to be detailed with regard to certain strategies (eg *question word, question phrase*). The underlying processes of these RS are not different but since problems were addressed from the reader's point of view, it was necessary to make such distinctions. The binary division is also distinctly related to the planning and execution phases as well as the goals which present themselves to the individual as problems. It is thus consistent with the data, compatible with what we know about language reception, cognitive processes and problem-solving behaviour (see chapter 2) and it is generalisable across tasks, items and readers (chapter 6, 7). Therefore, one can suggest that a taxonomy of strategies should be able to account for the factors mentioned earlier, should be based on explicit and consistent behaviour and should be

of reasonable length (Hosenfeld et al, 1981, for example, cite as many as 15 different RS just for *guessing* and/or *inferencing*.)

Yet another point of departure in the approach to the study of RS is that it has a somewhat solid theoretical base, having accounted for the various reading behaviours within reading theories and reading models (chapter 3 and 8). Earlier studies on RS tend to overlook the fact that it is only by relating closely and strongly strategic behaviour to the process that one can be sure of what is going on in relation to the classroom behaviours or other practices related to reading. To my knowledge this study represents the first attempt at subjecting the three theoretical approaches to reading, outlined in chapter three (decoding, psycholinguistic and interactive) to a detailed scrutiny in empirical research, through different tasks, across disciplines and languages. By doing so it does not claim to resolve the complexity of reading as a process; rather it raises a number of questions. For example, what is it that really constitutes a problem in each of the three models? Is it the word, its pronunciation, phrases, sentences, text structure, background knowledge or what, since all of these have been shown to surface at different levels and with different readers? The present approach, therefore, further extends the notion of problem-solving to other models of reading as well. What future research can do in this area is to confine specific problem areas and study it on a longitudinal basis, again with reference to particular models of reading.

So to summarise the points made so far concerning theory

(a) There is a further need for process-oriented studies with specific aims. These studies, based on systematic observation of F/SL readers engaged in the processes of reading and acquiring new RS, would help us identify useful remedial techniques. In these studies we should include subjects from a wide range of verbal abilities and use some of the methodological instruments employed in the present study (see chapter 5).

(b) Strategy taxonomies should be based on consistent and explicit criteria and empirical data analysis should be related to these criteria.

(c) RS should be grounded on fairly solid theories of reading.

(d) Research should concentrate on longitudinal studies with specific strategies. If such practices are carried out on case study scales (a suggestion supported by Hosenfeld 1984 as well as Alderson 1984) of students starting from the time they join college and continue for the 4-5 years programme, we will be in a position to obtain development dimensions of the reading process at the tertiary levels.

9.2.2 Methodology

The research paradigm adopted in this study constitutes an alternative in reading research. Process-oriented descriptions are usually obtained through verbal reports, retrospective (obtained after the reading task is completed) or introspective reports in the form of think-alouds (obtained during reading). This study developed a multi-method approach, combining this technique and adding self-observation and comprehension tasks, in the form of triangulation (Cohen & Manion 1980) in order to detect the RS used by the readers. The use of these techniques seems to provide useful descriptions of how readers obtain meaning from printed text and how they tackle their reading problems. They have thus proved feasible allowing strategies to be studied in the context in which they occur. The think-aloud procedure provides an information processing analysis based on Newell and Simon (1972). By asking readers to think-aloud about their problems it allowed strategies to be studied in the context where the readers were trying to sort out their problems independently. The reading tasks thus were not treated as materials with questions but rather as discourse for interaction, the junctures marking points of this interaction. It also made them aware of their own metacognitive ability.

There are, no doubt, problems that face the researcher while implementing this technique. For instance, in L1 reading there was the juncture problem. It seems that

the placing of stops for readers to halt and think-aloud is to be given enough consideration so that, although tasks can be executed to fulfil the researchers' demands and principles, they have to be equally approved by the readers. It further justifies why this technique is usually modified to suit various tasks and situations. Cavalcanti (1982), for example, found that, left to themselves, subjects would actually read large chunks and then retrospect. To avoid this pattern, she trained them to give think-aloud data each time they noticed that they had paused in the course of reading (see also chapter 5). The conforming to readers' views on the junctures used in Arabic protocols should, therefore, be considered a strength rather than a weakness of the implementation of this technique in this study. It meant making the task less demanding or requiring excessive concentration or effort (White1980). This problem also highlighted a very essential aspect of reading in L1 and L2. Whereas readers needed more than the ten halts provided for their L2 reading, in L1 the pauses were ten too many. In other words, this is a reflection of the speed with which readers read in L1 and L2.

The self-observation technique used in this study can be described as an immediate written retrospection case where a classroom task-based approach was used. This feature of the design again proved very fruitful, adding a new dimension of RS use which has been overlooked in most RS research, viz the occurrence of overt strategies. These two procedures, providing readers' own intuitions and insights, were further complemented by retrospective techniques (questionnaires and interviews), and the various reading tasks. It seemed important to analyse reading as directly as possible and to consider all factors that influence reading behaviour. The multi-method approach has, therefore, proved more reliable than a one-track method. This is clearly demonstrated in the consistency of RS use across the design (Chapter 7).

There are, however, certain limitations that emerge from the implementation of these techniques and their relationship to strategy study which suggest directions for further

research. One limitation is that any single study can only address a small set of questions due to the planning and effort required to collect data from even a small number of students. The planning portion requires that students understand what is expected of them and are able to generate usable protocols which can be used for later purposes. This is no small task as anyone with experience in this type of data collection will testify. Furthermore, one hour of data collection requires numerous hours of transcribing the taped interviews/protocols, translating (where L1 is used), coding, categorizing the student's narrative as representing one strategic process rather than another, and deciding whether and how to represent the underlying data through statistical analysis.

A second limitation is that research tends to be atheoretical in matters of strategy use and the tasks performed, in that it fails to explain how a study relates to a theoretical analysis of skilled performance on the task. I have tried to counteract this limitation in my work by relating strategy use to reading models (chapters 3 & 8), by establishing explicit and consistent criteria (problematicity and consciousness), by comparing my taxonomy with the existing ones (Olshavsky 1976-77, Block 1986) and by the multi-method approach itself in which one mode of strategy realisation is a counter-check on another. All this also compensates for my decision not to include samples from native speakers' reading behaviour. Far more work of this kind is necessary if we are to advance beyond the stage of simple replications of strategy reports.

Yet another limitation is that pertaining to think-aloud while reading may change the ways in which students habitually respond to reading tasks. In other words, as O' Malley & Chamot (1990:223-224), rightly observe

> The student could become sensitized to what the researcher is interested in hearing and begin to generate strategies where none otherwise would have been evident. The student s report of using a strategic mode [..] may therefore be more of a product of the data collection procedures than of the student's response to the task demands.

I do not consider this a serious drawback, however. In this study students seemed to use strategies that were so appropriate, not only for the reading tasks, but also for the various modes, that it is difficult to imagine their strategies as being artificial. Besides, they had, no doubt, little idea of what the researcher was after. What needs to to be examined in far greater detail are the strategies students use with different language tasks, especially in listening comprehension (since it is again receptive communication) and compare them with reading. Perhaps future research topics can include comparative studies of strategies used in reading comprehension and those used in listening comprehension.

As regard to interpretation of the verbal data used it must be borne in mind that in eliciting data on the language learning process, we are both asking someone to use language to do certain tasks and also to use language to describe how they did these tasks. In the present work the 'how' has to be redefined. Subjects' verbal protocol data were at times more a reaction to text and text problems rather than a description of the 'processes' (note that explicit statements of the following RS were made , viz *guessing, inferencing, rereading, using dictionaries, seeking assistance, using references, getting main idea* and *using general knowledge*). In that the subjects were talking to themselves and talking aloud as they read texts these are still think-aloud procedures. Students should be encouraged to think-aloud with certain tasks so that they can reflect on their own learning/reading activities and therefore make more value of this procedure as a valuable learning strategy in itself.

This study also used the cloze and recall tasks as well as classroom data to balance and complement the verbal aspects. Though the focus in these tasks was again on the process rather than the product (except perhaps with the recall tasks), they provide a more reliable picture of the use of RS and its relationship to other aspects such as concepts, orientations and memory.

On the whole, it emerges from this study that the verbal data can be a useful research tool under certain conditions and with certain limitations.

> Verbal reports, elicited with care and interpreted with full understanding of the circumstances under which they are obtained, are a valuable and thoroughly reliable source of information about cognitive processes.[..]. They describe human behaviour that is readily interpreted as any other human behaviour.
>
> (Ericsson and Simon 1980:247 quoted in Cohen 1987:38)

So to summarise the points made so far on methodology

(a) Triangulation gives results that are consistent from the different perspectives; they are thus much more convincing then one track results.

(b) The limitations that emerge from the implementation from this approach can be counter-balanced because of the nature of the approach.

(c) The approach need to be adopted on a longitudinal scale with comparative studies.

(d) Subjects need to be well-versed in the use of the techniques and their views taken into consideration. This can be achieved through rigorous pilot studies.

(e) Because of the complex nature of the RS study it would be wise to use more than one technique in its research pursuit.

9.2.3 Results

Results obtained from these different perspectives indicate that the reading process runs on distinctly meaningful lines. There are basically two ways for the complete recovery of text, either by automatic processing or by non-automatic processing or through a combination of automatic and controlled processes (Shiffrin & Schneider 1977, see also chapter 2 where I referred to these processes in receptive communication). When the processing is automatic there is not much thinking about it; the reader finds him/herself in the realm of declarative knowledge In the case of non-automatic processing a strategy would lead to a portion of text being comprehended or not. In

the latter case the reader either activates another RS , gives up an item or delays it until later. It is illustrated in the very first example of the thinking-aloud procedure.

S1 (after reading text 9): *I understand all the words* (automatic) *but I don't understand what mean by these words* (use of a strategy leading to zero comprehension). *After I read 10 I understand* (delaying and activating another strategy))*what mean by number 9 and I understand it* (automatic) *but one word which is difficult to me* (more problems). *The word is 'fatigue'.* (gives up). (see Appendix I for S1's complete verbal protocol).

By describing such procedural knowledge behaviour on the basis of strategies the study has shown how mental knowledge patterns are activated in a problem-solving situation. It is indeed possible to distinguish different strategies and these can, as we have seen, be projected on a bottom-up and top-down or interactive processing continuum (see 8.6.1, 8.6.2, 8.6.3)

Twenty-four RS have been identified in a number of different modes, viz L1 reading and various L2 reading situations. Although the additional strategies in my list indicate why a definite list of RS cannot emerge, the findings do allow certain generalisations, regardless of individual differences (see below).

Perhaps I need to use the term effective/non-effective to discuss these generalisations. Although most researchers would talk of effective strategies, readers or reading, no attempt has been made as to describe what constitutes effective reading and what strategies can be termed as effective. In this study I can clearly say, for instance, that the overt strategies are less effective than the covert ones, the distinction can be shown as follows:

Effective Strategies	Non-effective Strategies
Monitor comprehension	All the PI strategies
Comment on behaviour	Overt PS strategies
All the covert PS strategies	

The monitoring of comprehension and the commenting on behaviour can be called effective because they reveal the metacognitive awareness on the part of the reader, which no doubt is essential for pedagogical purposes. They show that readers can verbalise their problems at the various levels. The *'is clear'* signal is an indication of constant monitoring. It entails keeping track of the success with which one's comprehension is proceeding, ensuring that the process continues smoothly and taking remedial action, if necessary. All readers have shown this ability, but when good readers know they don't understand some portion of the text they do something about it. This concern of comprehension monitoring in receptive communication is not new (eg Baker & Brown 1984). What is new is that it draws a parallel between problem-identifying strategies in this problem-oriented approach to reading and the metacognitive strategies in learning strategy research (Rubin 1981, O'Malley & Chamot 1990).

The overuse of PI strategies in L2 in all modes, no doubt, is an indication of the way readers perceive reading. They do perceive it as problem-solving. While many problems at this level are shown by all readers, characteristic differences are also found between good and poor readers and between L1 and L2 reading (see chapter 8).

Coming to the PS strategies, this study bears out the claim that there is a relationship between use of effective PS and L1 reading comprehension for both disciplines and both types of readers. All readers, irrespective of their specialisation and L2 reading proficiency, make use of PS in their L1 reading, and the types of RS used are those

used by successful and effective readers reported in literature (eg Olshavsky 1976-77, Block 1986). Out of the six strategies realised in L1 reading (*use of background knowledge, recognise text structure, react to text, paraphrase, summarise* and *get main idea*), only three are to be found among the top ten in the L2 frequency list and that too with a very limited number of readers (around 30%, see 7.7). Other effective strategies are very rare. Readers in L2 use bottom-up procedures. They conceive reading as a linguistic rather than a text interpretative exercise. Therefore, the L2 reading of the majority of readers in this study must be considered as poor, bearing all the hallmarks of poor reading (depending on PI or ineffective overt PS strategies, see also 8.4.3).

However, the 30% use of the effective RS among some of the better readers is an indication that use of RS is a dynamic phenomenon, which in some measures correlates with the developmental change in the readers IL.

Among the strategies most commonly used in problem-solving in L2 are *paraphrase, summarise* and *get main idea* strategies. The use of these strategies in both languages show that there seems to be a transfer of strategies across languages (see also 8.4.2b).

Another feature of RS use is the frequency with which readers use them. As many as 27 strategies (some repeatedly) have been reported in the L2 reading of a single reader as against 19 in L1. Although the readers are found to adopt the same reading style, regardless of the language in which they read, they make far fewer pauses and, therefore, read faster in L1. It seems that protocols based on L1 reading , though less informative about the L1 reading problems, do provide useful insights as to the type of strategies the readers use in their L1.

The cross-sectional analysis see (7.10) has described the procedures used by eight different readers and found that there are characteristic differences in not only the use of RS among individual readers, but also in the ideas recalled. The study was able to

measure the use of RS of these readers against their concepts and beliefs. Each reader has developed strategies which suits his/her individual needs and implements these in different ways (see also the discussion of individual protocols in 7.10). For example S1, S2, S5, S38 and S46 (see also Appendix I) all show very distinct reading styles (a set pattern of RS use) in that they pursue the text in a very organised manner using the same strategies (*questioning words, summarising, paraphrasing* or *monitoring comprehension, etc*) consistently. This has, in fact, been the general pattern of RS use across the whole corpus. This is, in some way, similar to the way Brown (1987) has described the relationship of cognitive style to SLL and acquisition. Cognitive style in the above cases may relate to their comprehension style. A reader's reading style may be part of general cognitive style of processing any information, regardless of the type of information or its modality of transmission. In the recall of ideas readers tended to rely, again, more on *paraphrasing* and *summarising* than actually stating the main ideas concisely. This means that these strategies (*paraphrasing* and *summarising*) are all purpose strategies for some readers. The most apparent reason for the use of *paraphrasing* could be that, although readers may not have any problems, they wanted to make sure that they understood it

> [..]they just wanted confirmation to use their own words.
>
> (Feldmann & Stemmer 1987)

These subjects were selected for their individual characteristics on relevant variables, ie good/poor, BS/BA, and L1/L2. It seems to make sense to deliberately select extreme cases for investigation rather than examining average or normal cases. More work need to be done of this type with individual readers. Selection should made on clearly good and clearly poor L1 readers and compared to their reading ability in L1 and L2 on a longitudinal scale. Again both Alderson (1984) and Hosenfeld (1984) advocate such approaches

> a case study approach, longitudinal in nature which would involve subjects carefully selected and matched for comparison and contrast.
>
> (Alderson 1984:23)

For the recall of ideas similar longitudinal studies can reveal whether there is any developmental continuum, with readers following a route from bottom-up to interactive processing.

There are a number of things that differentiate reading behaviours (eg IQ, see also 8.4.3) but one of the most important is that of reader concept. This study has shown us that language learners do think about the nature of the process and are able to articulate some of these beliefs. This issue concerning beliefs is very much related to the Piagetian view that there are three types of self-regulation - *autonomous, active* and *conscious* regulation. In the autonomous stage, individual learning remains unanalysed and learners are totally preoccupied with the goal. They do not try to represent to themselves the nature of what they are doing. On the other hand, in the fully conscious stage processes are carried on exclusively on the mental plane. In the active stage learners move beyond exclusive preoccupation with the task and seek to understand principles behind it. There is awareness of one's actions and of a need to systematize, consolidate and generalize knowledge. At the outset theories are implicit. However, eventually, learners are able to describe them. From this perspective the concepts identified in this study can be interpreted as representing their 'theories in action' (Wenden 1987).

Part of their expectation and beliefs comes from factors like their home background, intelligence and personality characteristic, but a great deal of it comes *from the concept of reading that teachers have helped them develop* (May 1986:36).

Some relationships between belief and behaviour have been found by this study (see 8.3). However, the issue needs further investigation, perhaps a more definite statement about such a relationship. At the same time one should be cautious about quickly attributing what learners do exclusively to their beliefs. These questions need to be answered if we wish to better understand this facet of the readers' cognitive abilities.

Therefore to check the three criteria set in the earlier chapters,

- Readers do set reading **goals** (in fact most L2 reading is goal-related)
- Readers do conceive reading as **problem**-solving (it is needless to stress that much of the L2 reading is problem-oriented; how else can I explain why my readers can use so many strategies in the place of the required ten, the majority of which are PI ones)
- Readers can be **conscious** of the use of some of their strategies (they displayed their ability to bring their problems to the level of consciousness and think-aloud)

A reading strategy can therefore be rightly described as a **conscious** effort made on the part of the reader to solve a **problem** in reading.

This leads to the comparison I have drawn between RS and CS and reading and communication. Widdowson (1984) sees one of the main difference between conversational and reading interaction in the fact that the latter permits the reader much more scope in deciding what to make from the discourse. In conversation there are social conventions pressuring us to cooperate. In reading, the face to face aspect is absent. Faerch (1984) and Tarone (1983) had set conditions for CS. If I now combine the three conditions set by Faerch (1984) and Tarone (1983) for CS (see 2.6) and apply them to RS, keeping the Widdowson notion of reading (see 3.8.3), I can say that in their interaction with the text the readers either

(a) give up completely, (short circuit their reading after identifying problems) or

(b) reduce the original communicative intention (use ineffective strategies, eg use dictionary) or

(c) try to make use of the communicative resources available to solve the problem (use background knowledge, infer, etc).

The first two options are favoured by most readers in L2 reading whereas option (c) is most common in L1 reading only.

Also, taking this view of the relationship between RS and CS coupled with attempts to define RS in terms of 'consciousness' and 'problem-orientedness' may erroneously have served to delimit a class of behaviours which becomes associated with SL learners' problems in general, and SL reading problems in particular. This study, based on the solving of problems, cannot therefore throw light on what happens in reading when no problems are present.

Future research could aim at answering questions regarding the SL reading proficiency, its relation to L1 reading proficiency and the termination of tasks or short-circuiting with reference to RS.

9.2.4 Recapitulation

On the basis of the foregoing observations and through its findings (chapter seven) and analysis with reference to a host of different variables (chapter 8.9) I can make the following observations as far as the use of RS in this study is concerned. These observations should be treated with caution, bearing in mind the limitations pointed out throughout my foregoing discussions.

To start with I have already pointed out that the results are conflicting (see 8.6.3) since it is difficult to draw a line between reading problems and linguistic problems as encountered by the readers (BS/BA as well as good/poor) and as captured by the protocols.

Reading in L2 in this study is marked by the readers' overreliance on text based processing, and their constant use of PI strategies is obviously due to low proficiency in the TL. This study has not explicitly measured L2 proficiency, but the mean of the

results obtained from the tasks and its positive correlation with either TA or CT (each of which can easily be considered as an indication of L2 proficiency; in fact the cloze test has been used as proficiency test in a number of studies, eg Clarke 1978, 1979, Yassin 1987) is sufficient to make judgements on the linguistic proficiency of the readers in the study. This is complemented by the numerous stops in their L2 reading (17 PI strategies by a single reader) and supported by studies that actually found significant correlations between reading ability and language proficiency (eg Anderson et al 1977, where the study concluded that the best predictor of reading ability was not reading ability in L1 but rather proficiency in the FL), and by the view of the short-circuit hypothesis resulting from linguistic ceiling (eg Clarke 1978, 1979).

Another observation worth making is that there are some strategies that have shown to manifest themselves in L2 reading of the subjects (and this is the conflicting bit in my findings) but are not part of their L1 reading eg *guessing* and *inferencing*. This phenomenon suggests that since these are not transferred from L1 they can be language-specific, as proponents of the parallel processing theory of reading, eg Cowan (1976) and Yorio (1976) would claim

> strategies which readers employ to process a text must be to some extent language specific. That is the expectancies set up in the reader when sampling syntactic clues in text must be related to one's knowledge of the structure of that particular language.
>
> (in Alderson 1984:9-10)

Alderson's view is that if the strategies are language specific it follows that to the extent that languages concerned are markedly different in their structures, so too will be strategies required to read texts in those languages. English and Arabic are two markedly distinct languages. The difference are not confined to one or two linguistic aspects, but embrace a wide range of aspects. Taking into account the writing systems of the two languages, for example, we find that the orthographies of these languages are poles apart; one is written from the left the other from the right (see also Yassin 1982:4). This is not to suggest that readers reading in such languages have two sets of

strategies, one for each language. But, for the strategies that are not found in the L1 reading, this could be the case (see also Bell 1976 p. 120, on compound and co-ordinate bilinguals).

Therefore, from the results it seems that there is a transfer of certain strategies across the two languages but the transfer is not complete. And it is not always due to L2 proficiency, but also to a third factor and that is the reading ability part

> The familiar example of the student who knows all the words and grammatical structures of a sentence or paragraph and yet cannot comprehend what s/he has read is the result of learning the elements of the language without understanding the processes which one utilizes to communicate with these elements.
>
> (Clarke 1988:120)

My examples of poor reading ability cited in 8.7c illustrate this fact.

The pedagogical implication that can be made on the basis of all the above is simple. Readers need to taught language (systemic, mainly vocabulary, and schematic) as well as strategies and it is on this that the operationalisation of the findings can be built.

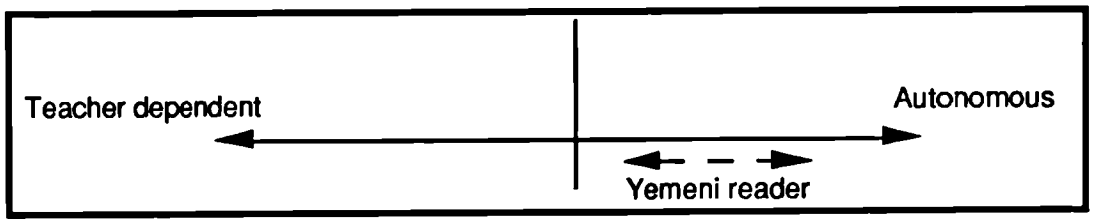
9.3 Operationalisation of the findings

One of the the leading educational goals of the research on learner strategies has, in fact, been an autonomous language learner (Wenden 1987). It is intended that insights derived from the research guide the development of learner training activities so that learners become not only more efficient at learning and using their second language but also more capable of self-directing these endeavours (Ellis & Sinclair 1989). Few SL teachers, especially tertiary level teachers, will deny the importance of this educational goal. Since this study is related to learner-centred LL it aims to provide readers with the ability to take more responsibility for their own reading, although it recognizes with Ellis and Sinclair (1989) that complete autonomy is an ideal, rarely attained in any

sphere of life, since people live in societies where they are affected and affect others. Perhaps the goal can be explained on a continuum scale as follows:

Figure 9.A

The goal for the Yemeni reader



Reading instruction in the classroom is usually teacher-centred and is limited to activities that precede or follow the reading texts. Teachers hardly help students while they are in the process of constructing meaning. We have seen the design of the lessons in the observation sessions. The aim of most of these lessons is to teach language through reading, either a set of lexis or a set of grammatical structures. In the process towards these goals reading is lost. The strategies that students develop during their reading lessons involve the acquisition of linguistic knowledge, new words, or new grammatical or rhetorical structures, that are soon forgotten. They are not ways of processing linguistic information to comprehend the text. Such a pedagogic practice of focusing on the language of the text may be justified as a language lesson, but it may very well be counter-productive as a reading lesson. Often what is known as reading is actually not reading at all; it is a series of language points, using texts as points of departure. Reading texts are thus sources of language exercises rather than reading exercises. Students naturally get influenced in their reading behaviour by this language focus in reading classes. Attention instead to **reading strategies and language** rather than to **language alone** can result in reading behaviour which is, at least, arguably better in that it can resemble the behaviour of successful readers or their own L1 behaviour.

Can SL readers reading techniques at the tertiary levels be changed? How successful can strategy training be at this level? Are strategies such as inferencing, recognising text structure, getting main idea, summarising or using background knowledge already part of the SL reading instructional programmes? We have seen that these strategies are only part of the good readers' repertoire and most readers' L1 reading. I tackle these issues below.

If the reading profession accepts reading as a problem-solving process, there are many implications for teaching problem-identification and problem-solving strategies which deal with the total reading environment rather than teaching hierarchies of reading subskills. At the tertiary levels, at least, it may be safe to assume that students possess a basic competence in English and that, at least, in the reading classes our task is to teach reading and reading strategies.

> If by teaching we mean passing on new information only there is probably no need to teach 'strategies'. [...] But if by teaching we also mean making learners conscious about aspects of their (already existing) behaviour, it is obvious that we should teach them about strategies, in particular how to use communication strategies most appropriately.
>
> (Faerch & Kasper 1983b:55)

The operationalisation of the findings can therefore follow the route presented in the ISPS model of reading discussed in the previous chapter. The components of the model, it should be remembered, are systemic knowledge, schematic knowledge and problem-solving. Through the systemic knowledge component I intend to develop the bottom-up strategies of the SL readers by helping them develop their vocabulary. Through the schematic component 'text structuring' and 'use of background knowledge' can be taught. The problem-solving aspect, the core of the model, should underline all reading strategies teaching where teachers should help readers while they are in the process of reading. The rest of this chapter draws at some of the implications of the study for these three aspects.

9.3.1 Developing the systemic component of the model

The central systemic problem as detected by the present study was the vocabulary problem. Subjects' over-reliance on words indicate that they lack enough vocabulary as well as a well-developed word-recognition skill to make them effective readers. In other words, the aim in this area can be rather paradoxical, viz developing students' vocabulary and at the same time weaning them away from over-reliance on basic units such as words and phrases and, therefore, from the frequent use of overt strategies.

Once a neglected aspect of LL, vocabulary development has rapidly changed in status to an area of growing reserach and publication. There are now theories of L2 vocabulary acquisition, a wide range of teaching techniques and a greatly increased awareness on the part of most teachers and learners of the importance of vocabulary development (Channell 1988).

The selection of vocabulary for any course is related to the coursebooks as well as the specialisations. Once these broad selections are decided, a framework for its presentation and aims has to be considered. As such there are numerous ways of developing vocabulary. To start with there is a substantial body of research on direct vocabulary instruction that has concentrated on memory training such as recall of vocabulary (see, for example Pearson & Dole 1987). Memory training in SL has focused on mnemonic techniques that facilitate vocabulary learning (eg Thompson 1987, Nattinger 1988). These are very limited in effectiveness since they require

> the additional effort to learn the associated relationships between the items to be learned, potential difficulties with pronunciation, individual differences such as age, prior educational experiences and cultural background, learning style predilections, task difficulty, and proficiency level of students.
>
> (O'Malley & Chamot 1990:166)

Other approaches to the teaching of vocabulary for comprehenion rather than recall found in the mainstream reading books are many and varied (eg Eskey & Grabe 1988, Carrell 1988, Carter & McCarthy 1988, McCarthy 1990, among others).

There seems to be a need among my SL readers for a development of automatic identification skills. There are two dimensions to the problem here as suggested by Eskey and Grabe (1988), one cognitive in that for successful decoding the reader must, of course, know the meanings of the forms, and the other is perceptual in that the reader must also recognize instantaneously the forms of their visual representations.

To develop identification skills, teachers might try what are called 'rapid recognition' exercises (Eskey & Grabe 1988:232). These exercise can help poor readers to identify quickly and accurately linguistic forms at word level; they should be intended for warm-up exercise in the first years of the tertiary level classrooms. The exercises have many forms. For advanced students there are variants of the exercises set for beginners (Stoller 1986, Eskey & Grabe 1988) in which students must match not just forms with forms but meaning with meanings, key words with synonyms or antonyms. Students should be made aware that doing these exercises in the reading classes is not for developing identification skills but for extensive and independent reading over time. These exercises, taken in small doses, can serve the purpose of consciousness-raising, that is drawing the reader's attention to the central purpose of developing the systemic skills in English. They can also serve to pinpoint problem areas and, if they are well-planned, may establish a foundation for future reading-rate development. Adams and Huggins (1985) claim that word recognition abilities (which they call 'sight vocabulary' p. 101) are the single best class of discriminators between good and poor readers. Perfetti and Lesgold (1977,1979) have argued that when a reader's efforts at word recognition are especially slow and laboured, short-term memory is so taxed that the reader cannot take full advantage of context.

At the phrase level, similar exercises can develop the chunking ability of the readers. The learning of chunking constitutes a crucial breakthrough for many SL readers and it is the reading teacher's job to build on this.

Yet another bottom-up exercise will be rate-building. Readers in L1 have been shown to read faster than in L2, making far fewer pauses. In L2 they read word by word, a strategy that hampers their understanding of most of the text. For rate-building, many systems are available as well as means of incorporating such systems in SL classrooms (eg Mahon 1986). However, as in the case of word-based and phrase-based exercises, rate-building should be done on limited scale and with consciousness-raising. The main purpose this can serve is

> The breaking down of any psychological barriers to reading faster in English.
>
> (Eskey & Grabe 1988:234-5)

One issue concerning the rate-building exercises is the role of words, specially unknown words. If there are too many unknown words, the text becomes inaccessible to readers. But SL readers have to encounter some unknown words in most texts they read. And although this is the best way of increasing their control of the vocabulary (through meaningful texts) readers do become anxious by the occurrence of these words and they stop reading to look them up in dictionaries, thereby interrupting the reading process.

Vocabulary development and word recognition as seen by Carrell (1988) focuses on the current thinking that converges on the notion that a given word does not have a fixed meaning, but rather has a variety of meanings around a common core, and that these meanings interact with context and background knowledge. According to Carrell, if readers do not have background experience, associated with certain types of things or actions then the comprehension of the lexical items and the sentences as a whole will be affected. Thus in this respect knowledge of individual words is strongly related to

conceptual knowledge. This phenomenon has already been pointed out in the present study through the protocols reported when subjects were trying to figure out the meaning of 'structural test' and 'stress man' (see 8.7d). Knowledge of vocabulary in such cases entails

> knowledge of the schemata in which a concept participates, knowledge of the networks in which that word participates, as well as any associated words and concepts.
>
> (Carrell 1988:243)

Carrell's views find support in McCarthy's (1990) book "Vocabulary" where he lists a number of vocabulary frameworks that are in line with this approach. For example, there is the topic-based vocabulary presentation (Thomas 1986) in which a topic is chosen to present a selection of connected words. It has been pointed out that topic-based materials rarely present only words which are topic-specific, eg Redman & Ellis 's (1989) 'A Way with Words'. A better example of topic-based materials appears in Sim & Laufer-Dvorkin's (1984) where two texts (one easy, one difficult) on the same topic, are used to focus on topic by concentrating on types of words. Vocabulary development based on lexical relations and component analysis of words has also been put forward. Faerch et al (1984) identify three structuring principles for learners' vocabulary, the learner's relating L2 words to the world, to the L1 and to other L2 words already known. Other methods of vocabulary presentation come in the form of grids (Channell 1981). Grids usually consist of a list of features on the horizontal axis and a set of words related by some common component of meaning on the vertical axis.

Carrell's views on vocabulary also find support in research specific to SL reading instruction that has shown that merely presenting a list of new or unfamiliar words to be encountered in the text (as also found in the 'Predicting' lesson in this study) even with definitions does not guarantee the learning of the words or the concepts behind these words or of improved comprehension of the text passages (see eg Hudson 1988).

In one such study three different types of vocabulary instruction before or concurrent with reading the target passages failed to produce any significant facilitating effects on the reading when compared to the absence of any vocabulary instruction (Carrell 1988, see also Johnson 1982).

It thus becomes obvious that linguistic decoding skills on which the SL readers are so dependent may, in fact, place a ceiling on their reading ability and cause short-circuits as the results in this study have demonstrated, and as Clarke (1978, 1979) and Cziko (1978) suggest. However, as the results of this study also demonstrate, and as Hudson (1988) would also stress, top-down processing involving schema production is very much implicated in the short circuit of SL reading. In fact, according to Carrell (1988) schemata can override language proficiency as a factor in comprehension. Let us therefore now turn to this second component of the ISPS model.

9.3.2 Developing the schematic component of the model.

This component is built on three independent strategies prominent in the schematic component of the model, viz, *'use background knowledge'*, *'recognise text structure'* and *'react to text'*. The teaching of the first two will be considered in this section. 'React to text' is a strategy which can be encouraged when the readers have mastered the primary ones. It is part of critical reading (Worden 1981) which requires us to push our students beyond the comprehension stage of reading, to encourage them to react to the texts with the same critical judgement they have shown when reading in their L1. This critical reading ability is often suspended when students undertake reading tasks in a SL, perhaps because they feel a great sense of accomplishment merely at having deciphered the author's message.

As regard to the use of background strategies, the reader will only be able to use his/her background knowledge strategy if s/he has knowledge concerning that background. So before venturing on teaching strategies of this nature we have either to teach or activate

their knowledge through other related procedures, or provide them with 'familiar' texts so that the background factor does not rise. This second suggestion is too easy to state and too difficult to apply since, at the tertiary levels, readers should be prepared to encounter all types of texts even within their own disciplines. And education is, after all, the extension of knowledge and the stretching of the learner. Therefore, I consider the former suggestions worth making an effort for.

So the pedagogical question that rises at this juncture is "How can we build background knowledge on the topic prior to reading? What are the appropriate pre-reading activities?" Research provides some guidelines to these questions in the form of L1 studies conducted with children. For example, Stevens (1982) increased learning from text compared with a control group for tenth-grade students reading a history passage by teaching them relevant background information for that passage. In another study, Hayes and Tierney (1982) found that presenting background information related to the topic to be learned helped readers learn from text regardless of how that background information was presented or how specific or general it was. However, although these studies support the notion that improving background knowledge can improve comprehension, they do not give us clear guidelines on the best ways of accomplishing this teaching (Carrell 1988). Some suggestions as put forward by Carrell (1988) include direct teaching of appropriate background knowledge which can be accomplished through lectures (Stevens 1982) or other pre-reading activities such as viewing movies, slides, pictures; field trips; demonstrations; real-life experiences, class discussions or debates; plays; text previewing; introduction and discussion of the key vocabulary to be encountered in the text. These pre-reading activities can be used in varying combinations. Also useful are text previewing activities such as those suggested by Swaffar (1981), which include the previewing of text genre as well as of text content.

Of particular relevance to SL readers of proficiency levels similar to those in the present study with limited vocabularies in the SL for whom meaning tends to break down at the word level, are pre-reading activities involving key-word or key-concept association tasks such as the use of 'semantic maps' (D. Johnson & Pearson 1978) where the teacher builds the new associations on the student-provided concepts. I illustrate this with the following example.

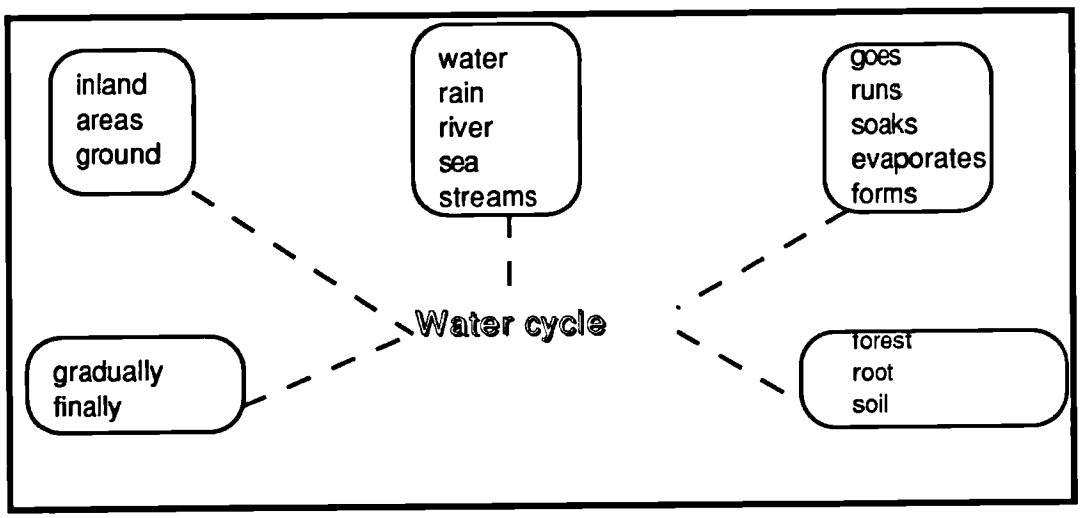
Example

A. Select a topic from the reading course, example the RC1 passage on "Water cycle".

B. Ask students to volunteer word associations for the title. As students volunteer these associations, write them on the transparency or BB

C. Organise the associations into the form of a 'semantic map' as follows:

Figure 9.B
Semantic map for background knowledge strategies
(after Johnson & Pearson 1978)



In attempting to get students to stretch their concepts, Pearson and Spiro (1982) encourage the teacher to use analogies, comparisons, even metaphors to build bridges between what the students already know about a concept and what they may need to know in order to read and understand a particular text.

Besides, several organised approaches and methods for facilitating reading through activating of background have also been proposed in literature, extending from the SQ3R (Robinson 1941) to LEA (Rigg 1981). These codified methods are already published and accessible in the pedagogical literature. All these methods train readers to do something before reading in order to activate appropriate background knowledge. In addition all of these methods have the reader read the text against the background of the activated knowledge and finally they all require the reader do something after reading to synthesize the new information gained from the text with their prior knowledge.

Other techniques that can be considered for teaching predicting text content include

- exposing a text bit by bit and asking readers to predict the contents of the text (eg Fillmore 1981)
- giving only the first and the last sentence of a paragraph of a text and asking students to reconstruct what has been omitted
- asking students to determine the original order of a number of detached paragraphs
- asking students to unscramble two intermingled texts (Crane 1984)
- cloze texts for contextual guessing (Hosenfeld et al 1981)

In order to help make readers aware of the **rhetorical structure** of texts, text-mapping should be encouraged. As described by Carrell (1988), text-mapping involves selecting key content from an expository passage and representing it in some sort of visual display (eg boxes, circles, etc) in which the relationships among the key ideas are made explicit. Dansereau et al's (1979) networking, Anderson (1978)'s mapping, Geva (1980 's flowcharting require students to diagram how the ideas and their relationships are represented within the text. Meyer (1975)'s top-level rhetorical structure approach requires students not only to identify the hierarchy of ideas but to label these patterns as well (eg time order). While the first three have all been used

successfully as instruction tools in L1, Carrell (1985) shows significant facilitating effects through explicit instruction using Meyer's approach with readers of ESL. If students are not familiar with the rhetorical structure of a text such instruction may build the schemata as well as activate them. 'Recognise text structure' can, therefore, be taught using some of the suggestions made by the researchers mentioned earlier in this section. It is described below.

Example

A. As before, select a topic, eg the RC1 passage on "Water cycle".

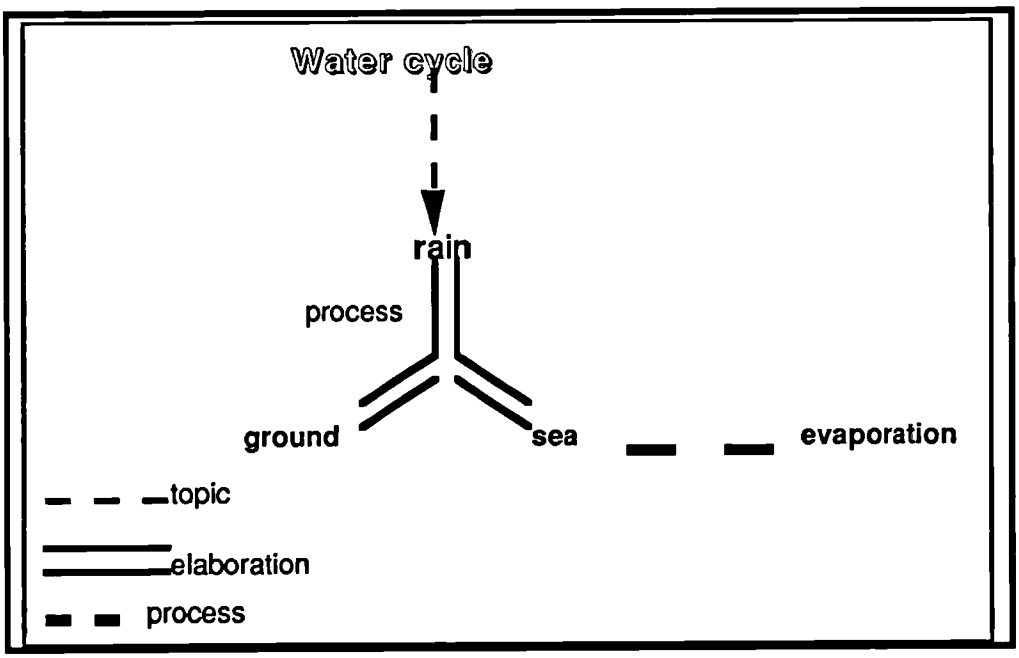
B. Help students use text cues to define the fundamental relationships as they manifest themselves in expository texts.

C. Help students to use diagrams, eg boxes, circles, maps, to understand how the ideas and their relationships are presented within the text

D. Help students to label these patterns as well. (see Figure 9.C below)

Figure 9.C

Flowchart of the 'water cycle' text (Based on Geva 1983)



9.3.3 Developing the problem-solving component in the model

As I stated earlier (8.10) the reading process in this study has been investigated within a problem-solving framework and the function of this component in the ISPS model is geared towards the instructional objectives. If this is accepted then instruction can presumably take the form of offering problem-posing tasks to readers, like some of the above exercises, so that they may in some concerted way co-exercise their communication and use RS in the accomplishment of the task. Within a communicative methodology as Faerch and Kasper (1983a:) acknowledge in their introduction,

> such an emphasis upon process in which learners are faced with a range of differentiated tasks through which they can exercise their strategies is a defining characteristic.

The immediate concern here is, therefore, strategy training or strategy development. Many activities have been suggested by a number of researchers. In all of these, the teacher identifies and assesses the strategies students are already using, then explains the strategy and provides opportunities to practise it (O'Malley & Chamot 1988, Jones et al 1987, Weinsten & Underwood 1985, Hosenfeld et al 1981).

O'Malley & Chamot (1988) developed a sequence of training activities. These provide general guidelines for content-based elementary and secondary ESL programmes, The Cognitive Academic Language Learning Approach (CALLA).

The Jones et al (1987) sequence is a component of their strategic teaching model and is intended for use in all content areas in mainstream native-English classrooms.

The Weinstein and Underwood (1985) sequence was developed for a university course designed for students who need to improve their academic learning skills.

Hosenfeld et al (1981) developed a curricular sequence of activities to promote good reading strategies in classroom settings used in Western New York in four different foreign languages with high school students. In reading strategy research, perhaps this is the most detailed and the closest to the aims of this study. The other approaches mentioned are not solely for RS instruction. Hosenfeld et al's curricular sequence of activities consists of seven steps. In the following sections I describe how some of these procedures can be adapted in the Yemeni context as regards the teaching of RS. I have made some adaptations to the procedures, bringing in my material from the data base and incorporating my data elicitation techniques. These procedures make the pedagogic assumption that explicit awareness (consciousness) of what one is doing is the better method of teaching reading.

There may be counter-arguments concerning the issue of consciousness in learning. Krashen (1988:3), for example, may claim that it is difficult to apply conscious learning to performance successfully. However, I would say it is not impossible. Besides Krashen is relating his idea of consciousness to the Monitor (see also chapter 2) which functions under certain conditions such as time, form and rule, and more in the production of speech than its reception. In my view I am supported by LS studies, for example, Rubin (1987) and Smith (1981) who affirm that consciousness-raising is not a time wasting procedure. Further most proponents and students of learner strategy assume that making strategies conscious may enable learners to use their strategies more effectively and efficiently (see also Rubin & Henze 1981). There is a conscious intervention, though indirect and largely implicit, in the way we as teachers use language texts in our explanation and the way we make learners aware of the various aspects of language. So, there should not be any harm in our making them explicitly aware of what they are doing and what they should be doing. The following selected activities aim at making students

- become more effective readers
- take on more responsibility of their own reading

The Hosenfeld et al scheme provides an illustration of how one can conduct the teaching of strategies such as *guessing* and *inferencing*. It is beyond the scope of the present study to go into detail concerning the teaching of each and every strategy or presenting procedures from other models (eg Ellis & Sinclair 1989). This should, therefore, be considered as one approach to implementing the PS component in the reading model. Of course, other ways can be worked out.

In this scheme the first five steps are preparatory and the actual teaching of guessing/inferencing starts with step six. Therefore, to the scheme.

Step one: Teach students to self-report while reading.

In a way similar to the protocol procedure used in the data elicitation design or the self-observation procedure the teacher might ask students to read silently a passage for meaning and stop when they come to an unknown word. They should then tell the T what they do to get the meaning. T should ask several students to think aloud . Their self-report segments will then provide models of the procedure to the rest of the class.

Step two: Identify students reading strategies

As students read and self-report T moves from desk to desk and records students' general reading behaviour on a 'guide' similar to the one used by Hosenfeld et al (1981). This can be compared with the list of RS provided by the present study (additional RS can be added or the present ones modified). The Hosenfeld study list is not recommended for this purpose since it cites as many as 15 different RS just for 'guessing' and 'inferencing' (p. 419).

Step three: Help students to understand the concept of strategy and to recognize that some strategies are more effective and successful than others.

Similar to the Hosenfeld study, where students are asked to add the first 1 to 10 count numbers, a problem-solving activity can be set for the class, and in a full-class

discussion students share their PS strategies. Students then read a passage and share their decoding strategies in a full-class discussion.

Step four: Help students to identify strategies they use to decode a text in Arabic containing unknown words.

A. An Arabic passage with unknown words, eg an excerpt from "Old age and the respiratory system", is presented on a transparency.

B. Students are asked to

- read the passage silently
- identify the meaning of the nonsense words
- indicate how they guessed the meaning of the unknown words

C. T lists the RS on the BB

Step five: Help students to identify strategies they can use to decode English texts containing unknown words.

A. Present the following passage on a transparency (excerpt from "The Planemakers")

Given a certain power of engine, and consequently a certain fuel consumption, there is a practical limit to the total weight of aircraft that can be made to fly. Out of that weight as much as possible is wanted for fuel, radio navigational instruments, passenger seats, or freight room, and, of course, the passengers or freight themselves.

B. Ask students to

- read the passage silently
- identify the meaning of *consequently, consumption, navigational* and *freight*
- indicate how they guessed the meaning of these words

C. Point out the similarity between the strategies they used to decode the L1 and L2 texts.

D. List the strategies on a transparency. Repeat B with additional reading passages to identify as many of the listed RS as possible.

Step six: Provide instruction/practice/integration for specific RS.

Strategy to be taught= Guessing from context

Instruction:

Help students to recognise that they can use a variety of types of context clues to guess the meaning of unknown words.

A. Present examples of a variety types of clues on a transparency, eg excerpts from "The planemakers"

1. Two kinds of *ground strength tests* are carried out. The first is to find the resistance to loading of the wings, tail, etc until they reach their maximum load and collapse. The other test is for fatigue strength. (summary clue).

2. This specialist is called the *'stress man'*. He takes account of any unusual stress that may be put on the part as a precaution against errors in manufacture, accidental damage, etc. (restatement clue, also a paraphrase).

B. Explain how context (both within and outside the text) provides clues to the meaning of the unknown words, eg 'ground strength tests' and 'stress man'.

Practice:

Provide guided practice which will help students to guess contextually.

Task 1

A. Present several paragraphs containing unknown words on a transparency, for example the following paragraph from "The planemakers":

The stress man's calculation go to the designer of the part, and he must make it as strong as the stress man says is necessary.

B. In a full-class discussion, ask students the following questions

- What is the meaning of the word *calculation*?
- Why did you choose _____ or _____?
- What clues did you use to help you determine the meaning?

- What is the meaning of the word *necessary*?
- What words helped you to make your guess ?
- How did these words helped?

Task 2

A. Present the following words and ask students to guess their meaning (these words are chosen either because their meaning changes in different contexts or they are assumed to be unknown to students)

1. blow 2. crop 3. wild 4. will

B. Present the following passage from RC2 on the transparency and ask students to guess the meaning of the four words.

Mr. Budd left the drier to blow the fiery crop of hair at its wild will for a moment, while he fetched the 'Evening Messenger'.

C. By comparing students' guesses of the words in isolation and in context, T can make readers aware of guessing meaning of words without context and guessing their meaning with the aid of contextual clues.

Task 3

A. Select a sentence from a later section of a story students are reading. Delete a word or phrase from the sentence, and present it on a transparency, for example, the following excerpt from RC2:

He fetched the _____

B. Ask students questions that they can ask themselves when they are trying to guess the meaning of words. For example

- What has happened so far in the story that might reveal what he fetched?
- What words might fit here? what are some words that would not fit?
- Let me add information

  The stranger read the paragraph.

- Now can you guess what he fetched?

Integration

Provide follow-up activities that help students to integrate the new strategy into their day-to-day reading behaviour.

A. Continue asking the kinds of questions used in the previous tasks with students' daily reading assignments. Ask students to identify words which were unknown to them in their assigned readings, to describe what other words helped them to guess their meaning, and to describe how these words helped. By sharing strategies, students who did not discover the meaning of these words will learn clues they could have used.

B. Broaden students' understanding of the concept of context. Point out and illustrate how context can clarify not only unknown words and phrases but also unknown sentences, paragraphs, and larger sections of a text.

These developing procedures will lead to a smooth transfer to other strategies. As students become familiar with this set of RS other steps can be included, with larger texts, eg

- Can you rephrase the sentence in your own words?
- Can you give me a summary of this paragraph?
- Can you get the main idea of this sentence?

These questions can then be followed by the reporting type ones, eg

- What clues / and or strategies did you use to do so?

Guessing/inferencing vocabulary from context is perhaps the most important of the vocabulary attack strategies. Students through the above procedures are made aware of the number of language clues available to them when they are stopped by an unfamiliar word. They should realize that they can usually continue reading and obtain a general understanding of the items. In context work there are syntactic and semantic

parameters of which we should make our students aware. We can emphasise the redundancy of language by demonstrating the types of contexts which can provide the meaning of the the unfamiliar words.

In teaching RS such as *use background knowledge* and *recognise text structure* the exercise and approaches mentioned earlier can follow the same procedures. For example, in the semantic-mapping exercise, reflection on the associations of the concepts can form the basis for class discussion where students can talk of their strategies of arriving at the concepts.

9.4 Instructional implementation

Having set a programme for strategy development, one has to consider how it can be implemented. Two issues related to actual implementation of RS instruction can be identified.

- Developing in teachers the understanding and techniques for delivering effective RS instruction to students.
- Developing and adapting instructional materials that provide RS instruction, either as a supplement to the core SL reading textbooks or as an integrated system included in the core textbooks.

9.4.1 Developing in teachers the understanding and the techniques for delivering RS instruction

Very little attention has been given to training in which teachers are familiarised with techniques for strategy training. Virtually all strategy training in both L1 and L2 contexts has been conducted by researchers. According to O'Malley & Chamot (1990), Derry and Murphy (1986) in their review discuss a number of strategy training studies conducted in four learning domains - memory training, reading strategies training, problem-solving training, and effective support training. In each domain, issues such as instructional materials, curriculum, and training procedures are described, but no

mention is made of how teachers have been or can be trained to teach strategies to their students.

Yet there is a need not only to train teachers in methods of incorporating strategy instruction in their classrooms but also to convince teachers that learning/reading strategies can be effective for their students. One pilot study to train teachers to use learning strategy curriculum in high schools and community colleges was conducted by Weinstein and Underwood (1985), who reported student performance gains six months after the conclusion of the teacher training sessions.

Perhaps the best recommendation for teacher training for the present situation can be based on the staff development model developed by Joyce and Showers (1987). The model provides for ongoing training, practice, and feedback. Teachers participate in training activities that extend over one or more school years and include frequent workshops, collaborative planning, and classroom observation with a peer. The model has three stages for staff development activities:

Stage One: Presentation of new information. The value of the new information is emphasised, and the classroom applications are demonstrated so that teachers can see how the theory works in practice.

Stage Two: Practice and feedback opportunities are provided. Participants practise the new techniques during the training session and receive feedback from each other and from the trainer. Immediate practice in the classroom follows.

Stage Three: Consolidating the new information. In this stage teachers observe each other's approaches to using the new information in the classroom, plan together and encourage each other. To facilitate the process videotapes are made of teachers as they try out the new techniques.

Some fairly obvious things can be done with the above model. For example, this type of intensive and ongoing staff development can be arranged in the form of in-service

workshops for the ELT staff at the tertiary level. These workshops can be organised during semester breaks or summer vacations It can also be incorporated in the methodology courses of III and IV years of the CASE. The Ellis and Sinclair Teacher's Book "Learning to Learn English" can be used as a starting point for such courses. It provides a thorough introduction to the theory of learning training, detailed guidance on using the materials in class, complete tapescripts as well as an annotated bibliography. The accompanying cassette provides recordings of native and non-native speakers to support the training activities.

9.4.2 Developing and/or adapting instructional materials

A number of instructional materials have been developed for strategy training for native English-speaking students (eg The Chicago Mastery Learning Reading Program with Learning Strategies, Jones 1983) although to teach strategies in the SL classroom there are very few. This makes it even more difficult for potential teachers to incorporate strategy instruction into their classrooms, because they must develop materials as well as carry out the instructional techniques that will familiarize their students with strategy applications.

Chamot (1987) and O'Malley (1988) have developed a set of instructional materials that teach LS for both language and content. The materials are based on the CALLA model described earlier in this chapter (see 9.3.3). The materials focus on the content areas of social studies and mathematics, where instruction is provided on strategies for developing procedural knowledge in all four language skills. A detailed outline of the CALLA project materials is beyond the scope of the present chapter (see, however O'Malley & Chamot 1990 for this purpose)

The Ellis and Sinclair (1989) Learner Book entitled "Learning to Learn English" is another example of resource material that aims to help students become more effective and more responsible language learners. A variety of classroom activities are also

suggested, including some on reading. The model for strategy instruction consists of three phases designed on the Hosenfeld et al's (1981) RS teaching model. In the first phase students are introduced to LL processes through discussions with the teacher, questionnaires about their learning approach, analysis of their LL needs, and investigation of learning resources available outside the language classroom. The second phase provides direct instruction and practice in learning strategies for particular skills and in the third phase students take charge of their own learning through activities that help them identify resources and plan realistically for continued language study as part of their overall schedule. Thus the approach calls for integrated training of strategies and language even though the materials themselves address strategy instruction only.

The reading section deals with the strategies such as skimming, scanning and reading for detail. The problem here is that similar exercises are found in the students' reading coursebooks (eg *Reasons for Reading, Strategies for Reading,* etc.) the result of which is now known. The strategies, mentioned in the book, are related to purposes and reasons of reading rather than problem-solving. Perhaps only the metacognitive sections of the reading instruction of this book can be of effective use for the present study.

Thus the best suggestion that this study can make as far as resources go is to use the available coursebooks but concentrate on the process of the reading rather than only the product.

To illustrate how a teacher might plan the different phases of instruction using textbook materials, Jones et al (1987) in their Strategic Teaching Model provide an example of the thought processes of a 'strategic' teacher:

(a) The teacher analyzes the textbook coverage of the topic and identifies major areas that have to be supplemented.

(b) The teacher anticipates problems students may have in identifying the most important concepts and assesses strategies students are already familiar with and those that will require extensive guidance, eg the area of background knowledge.

(c) The teacher goes back to the textbook to check for vocabulary that may be difficult for students and decides on vocabulary development exercises that will stimulate student thinking about the concepts to be presented.

(d) The teacher then prepares a plan for the various phases of the lesson, similar to the phases presented in Hosenfeld et al scheme.

9.5. Summary

In this chapter I presented three major implications that have resulted from the present study, viz theoretical, methodological and pedagogical. In the theory section, I tried to deal with the two major theories on which the study is based. In the methodological section I highlighted the strength and weaknesses of the triangulated approach which suggest directions for future research. The pedagogical section dealt with the three components of the ISPS model and how RS instruction can be provided on the basis of this. The scheme as suggested by Hosenfeld et al (1981) formed the guidelines for the procedures presented, with additional insights. The chapter ended with some suggestions for the implementation of the scheme.

GENERAL CONCLUSION

This study has attempted to identify and analyse the strategies of reading that the Yemeni readers employ as they read textbooks in classroom situations at the tertiary levels. It has first looked at the concept of strategy as it is commonly used in learning and communication. The phenomenon, though very popular in today's teaching and learning literature, is not devoid of the problems of identification, analysis and categorisation.

Paving the way through the terminological and other issues, the study then ventured to look at strategies within reading models and successfully identified these in theoretical terms. The review of reading strategy research helped in the understanding of the ideas existing in the field as far as methodology and taxonomies are concerned. Here, again, the narrowness of the paradigms used in almost all of the studies proved unsatisfactory to the aims of the inquiry as set for this study. The alternative was to try a triangulated approach, in the form of a five-stage design. This, when implemented, though challenging and demanding, highlighted various aspects of reading behaviour, confirming the existing views as well as adding to them. It showed, for example,that the theoretical orientations of the readers are, to a great extent, moulded by the instruction they receive. Therefore, to a certain degree, the strategies they employ are manifestations of these theoretical orientations; they reflect the views held by the readers and surface themselves in the various reading situations, or modes. This has strong implications for the reading instructions at this level, as well as the primary and secondary levels of ELT. In their own language the same readers have been shown to rely on more useful strategies, indicating that there is a difference in the way readers perceive and use a reading task. In L1 they are less teacher-dependent and more autonomous than they are in L2.

The reading strategy taxonomy, which consists of twenty-four strategies, accounts for two major types of behaviours, viz problem-identifying and problem-solving. Meaning for the Yemeni SL readers lies in the text and they thus spend most of their time identifying problems of a textual nature. The solving of these problems is not an easy and/or fruitful task. Therefore, some recommendations, through a scheme of operationalisation of the findings, have been put forward. This can be modified for the implementation depending on the needs and time of the disciplines.

This study shows us how to look at reading through the eyes of our students. If we are really concerned for their reading and, through reading, their learning of the language and achieving their goals in their specific disciplines, then we should build on their conscious efforts and strategies. We should encourage them to be dependent on their own ability by making them conscious of these. By consciously leading them through the various stages of the RS implementation ladder we can help them to automaticity which after all is the goal of our reading instruction. These efforts need to be applied in our teaching of reading if we are to go beyond the decoding level

> Instruction is a provisional state that has its object to make the learner or problem-solver self-sufficient.[ ]. Otherwise the result of instruction is to create a form of mastery that is contingent upon the perpetual presence of a teacher.
>
> (Bruner 1966:53)

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Appendix A
STAGE 1
QUESTIONNAIRE

This questionnaire is designed to gather information about how, you, as a student of English, go about learning that language, especially how you read in that language. Below are two sections. In section one you are kindly asked to give some information about your language background and learning. In section two you are requested to give information regarding how you read in Arabic as well as in English.

==========

Name_____ **Date**_____

==========

SECTION ONE : LANGUAGE EXPERIENCE

Please circle or fill in what is appropriate.

1. Mother tongue

Arabic_____**97%**

Other_____**3%**

==========

2. Year of study

First_____**50%**

Second_____**50%**

==========

3. Specialisation

Arts_____**50%**

Science_____**50%**

==========

4. Language(s) you speak at home

Arabic_____**100%**

English_____**12%**

Other_____**10%**

==========

5. Language(s) you are now learning

Arabic_____**50%**

English_____**100%**

Other_____**2%**

==========

6. How long have you been studying English?

	8-10 years	more	less
BS	**84%**	**8%**	**8%**
BA	**70%**	**24%**	**6%**

==========

7. How do you rate your overall standard in English as compared with the proficiency of the other students in your class?

	v good	good	average	poor
BS	4%	45%	43%	8%
BA	14%	59%	27%	0%

==========

8. How important is it for you to become proficient in the language?

	very	quite	not so	not at all
BS	51%	36%	11%	2%
BA	82%	18%	0%	0%

==========

9. Why do you want to study English? Please choose one.

	interested	study	career	other
BS	29%	56%	10%	5%
BA	48%	6%	42%	4%

SECTION TWO: READING EXPERIENCE

10. Do you like reading, in general?

	a lot	average	little	v little
BS	40%	36%	16%	8%
BA	44%	44%	10%	2%

==========

11. How much do you read in Arabic/English every day?

	2 hours	1 hour	1/2hour	less
BS	20%	37%	22%	21%
BA	20%	43%	27%	10%

==========

12. Does your specialisation require a lot of reading?

	a lot	average	little	v little
BS	56%	42%	0%	2%
BA	80%	20%	0%	0%

==========

13. What do you mainly read in Arabic/ English?

Arabic

	textbooks	newspapers	magazines	other
BS	6%	66%	15%	13%
BA	13%	45%	40%	2%

English

	textbooks	newspapers	magazines	other
BS	94%	2%	4%	0%
BA	88%	8%	4%	0%

==========

When you are reading a book in English.....

14. .. do you read word by word?

	always	often	rarely	never
BS	19%	46%	29%	6%
BA	49%	33%	10%	8%

15 ..do you pronounce every word as you read?

	always	often	rarely	never
BS	15%	44%	37%	4%
BA	39%	47%	8%	6%

16 ..do you read sentence by sentence, ie you read one sentence, try to understand it, then read the next sentence?

	always	often	rarely	never
BS	46%	38%	14%	2%
BA	44%	38%	16%	2%

17 ...do you read a number of sentences, ie a paragraph understand it and then go to the next paragraph?

	always	often	rarely	never
BS	35%	41%	19%	5%
BA	51%	31%	14%	4%

18. ..do you translate words/phrases in L1 as you read?

	always	often	rarely	never
BS	16%	40%	37%	7%
BA	27%	40%	25%	8%

19. How often do you use dictionary when you come across a difficult word?

	always	often	rarely	never

BS	**38%**	**43%**	**19%**	**0%**
BA	**54%**	**34%**	**12%**	**0%**

20. Do you compare English with L1 as you read?

	always	**often**	**rarely**	**never**
BS	**23%**	**26%**	**46%**	**5%**
BA	**37%**	**41%**	**16%**	**6%**

==========

21. When you find a word or expression that is difficult, what do you generally do? Use numbers, 1,2, to show what you do most, etc?

	read again	**use dictionary**	**guess**	**seek assistance**
BS	**56%**	**36%**	**6%**	**2%**
BA	**66%**	**12%**	**18%**	**4%**

==========

22. What usually helps you understand the passage you are reading? Use numbers, 1,2, to show what helps you most, etc?

	illustration	**glossary**
BS	**35%**	**65%**
BA	**38%**	**62%**

==========

23. What do you do to remember the main idea of your reading? Use numbers, 1, 2,to show what do most?

	notes	**summary**	**translate**	**other**
BS	**65%**	**22%**	**13%**	**0%**
BA	**46%**	**24%**	**24%**	**6%**

24. What do you do to remember the details of your reading? Use numbers,1, 2 ,to show what you do most, etc?

	notes	**summary**	**translate**	**other**
BS	**59%**	**22%**	**17%**	**2%**
BA	**56%**	**22%**	**22%**	**0%**

==========

25. Do you ever question the meaning of a clause/ sentence in a reading text?

	always	**often**	**rarely**	**never**

BS	8%	58%	34%	0%
BA	18%	54%	24%	4%

26. Does the title help you say what the text will be about?

	always	often	rarely	never
BS	29%	54%	17%	0%
BA	34%	44%	20%	2%

27. How often do you use general knowledge to understand reading?

	always	often	rarely	never
BS	16%	55%	29%	0%
BA	28%	50%	20%	2%

28. What do you consider the most difficult thing while reading in Arabic/ English? Use numbers, 1, 2, 3 to show what is most difficult?

Arabic

	word	structure	content
BS	35%	20%	45%
BA	36%	46%	18%

English

	word	structure	content
BS	59%	22%	19%
BA	60%	34%	6%

29. How do you try to solve the most difficult problem (in Q. 28) in Arabic/English?

Arabic

	reference	seek assistance	summarise	reread
BS	18%	39%	34%	0%
BA	31%	53%	24%	4%

English

	reference	seek assistance	summarise	reread
BS	56%	9%	13%	22%
BA	65%	27%	8%	0%

30. Please add any comments regarding your reading in Arabic/English?

Arabic

	reread	use structure	comment	other
BS	29%	7%	43%	21%
BA	36%	10%	54%	0%

English

	reread	use structure	comment	other
BS	28%	6%	44%	22%
BA	26%	8%	50%	16%

Thank You

Appendix B
Stage 2
Cloze and Recall Tasks

Appendix B1
STAGE 2 (1)
Cloze Test

Reading Directions

In the following passage, some of the words have been left out. First read the entire passage and try to understand what it is about. Then try to fill in the blanks. It takes exactly one word to fill in each blank. Contractions like can't or words with a hyphen like well-being count as single words. If you are not sure of the word that has been left out, guess.

They call it the noble art. But what is noble about two men slugging away at each other until one of them is unconscious on the canvas while hundreds of people, safe in their seats, roar and shriek, and a few others, without lifting a fist, can pour money into their bank deposits?

If you have ever seen a (1) **boxer** after a bout, you would never (2) **call** boxing noble. You must have seen (3) **those** close-ups on television - those bleary half-shut(4) **eyes** those bruised thickened lips, the blood (5) **pouring** from cuts around the eyes. It (6) is degrading to think that a man (7) **has** been prepared to put up with (8) **that** kind of punishment in the name(9) **of** sport and as a means of making (10) **a** living. It is degrading to think that it was another man who inflicted that pain and punishment on him for the same reasons.

But it goes beyond a battered face and a loss of dignity. **Recently, a boxer died in the ring, and pressure rose again for the sport to be banned and rightly so.**

(Source: Jones 1989:76-77)

Questions:

Please try to answer the following questions, as clearly as you can. You are requested to circle or fill in what is appropriate.

1. In trying to fill in the blanks, how did you proceed in most cases?

(a) guessed words in isolation_____ 1
(b) referred the words to the whole sentence_____ 2
(c) referred the words to the whole passage_____ 3
(d) other (please specify)_____ 4

==========

2. For example, when you filled blank 2, what guided you?

(a) the word just before the blank_____ 1

(b) the word soon after the blank_____ 2

(c) the sentence in which the blank occurs_____ 3

(d) the paragraph in which the blank occurs_____ 4

(e) other (please specify)_____ 5

==========

3. Look at blank 4, are you sure of the answer?

Yes _____1 Why?_____2

No_____2 Why?_____4

==========

4. Look at blank 8, what other word(s) can take its place? Why?

Word(s)_____

Reason_____

==========

5. Is there any blank you could not fill in?

If yes, why?_____

==========

6. Write the next sentence in the passage in the space below.

_____

Thank You

Appendix B2

Item Analysis (Cloze Test) for the BS group

Items	No of Subjects answering correctly	Item facility%	Item Type
1	39	78	C
2	2	4	C
3	0	0	C
4	46	92	C
5	0	0	C
6	46	92	C
7	43	86	C
8	1	2	C
9	49	98	F
10	29	58	F

MFV of content words = 44.2 SD = 45.9
MFV of function words = 78 SD = 28.2

Item Analysis (Cloze Test) for the BA group

Item	Number of subjects answering correctly	Item Facility%	Item Type
1	44	88	C
2	6	12	C
3	2	4	C
4	32	64	C
5	0	0	C
6	47	94	C
7	43	86	C
8	2	4	C
9	45	90	F
10	29	58	F

MFV of content words = 44 SD = 42.6
MFV of function words = 74 SD = 22

Appendix B3
STAGE 2 (a)
RECALL TASK (1)

Prereading Directions

Please read this passage carefully. It is followed by some questions which you will have to answer without looking at the passage again.

Water goes round in a cycle: it falls as rain, and some soaks into the ground while some runs off as streams; gradually much of it collects into rivers and runs into the sea. From the sea, and also from inland lakes and any wet areas such as forests, water evaporates into the air; there it forms into clouds and travels with the wind; finally it falls again as rain. As water goes round this cycle it picks up a number of substances some of which are helpful and some harmful to man.

Every community is concerned about how much rain it will get to supply its water needs. They should also be concerned about what happens to the rain after it has fallen. How much just runs off down to the sea and how much is caught and stays in the area? Water that runs off quickly does the community little good . What is held in the soil, particularly the root systems of forests, will benefit the community over a long time. Water stored like this underground lasts longer than water in surface dams. So trees (forests) are very important to the community and a health worker should try to see that trees are not thoughtlessly cut down for fuel and that more trees are planted than are being cut down.

(Source:Wood et al 1984-85)

Post-reading Directions

1- Write down as many of the main ideas from the passage as you can remember.

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

g. _____

h. _____

2- How did you find the text?

very difficult	difficult	easy	very easy

MAIN IDEAS FOR RECALL TASK (1)

1. The movement of water.
2. Evaporation of water.
3. Formation of clouds.
4. Substances are gathered in the cycle.
5. The community is concerned about rain.
6. Concern about the amount of rain water that stays in the area.
7. Amount of rain water stored underground.
8. The importance of trees to the community.

Appendix B4
Recall Task (2)

Prereading Directions

Please read this text carefully. It is followed by some questions which you will have to answer without looking at the passage again.

'The police seem to have given it up as a bad job,' said the man.
'Perhaps the reward will liven things up a bit,' said Mr. Budd, the thought being uppermost in his mind.
'Oh, there's a reward, is there? I hadn't seen that'.
'It's in tonight's paper, sir. Maybe you'd like to have a look at it'.
'Thanks, I should.'

Mr Budd left the drier to blow the fiery crop of hair at its own wild will for a moment, while he fetched the Evening Messenger. The stranger read the paragraph carefully and Mr Budd,watching him in the glass, after the disquieting manner of his craft, saw him suddenly draw back his left hand, which was resting carelessly on the arm of the chair, and thrust it under the apron.

But not before Mr. Budd had seen it. Not before he had taken conscious note of the horny, misshapen thumb-nail. Many people had such an ugly mark. Mr. Budd told

himself hurriedly - there was his friend, Bert Webber, who had sliced the top of his thumb right off in a motor-cycle chain - his nail looked very much like that.

The man glanced up, and the eyes of his reflection became fixed on Mr. Budd's face with a penetrating scrutiny - a horrid warning that the real eyes were steadfastly interrogating the reflection of Mr. Budd.

(Source:Grellet 1981:184)

Post-reading Directions

1- Write down as many ideas from the passage as you can remember.

a._____

b._____

c._____

d._____

e._____

f._____

g._____

h._____

2- How did you find the text?

very difficult	difficult	easy	very easy

Thank You

MAIN IDEAS FOR RECALL TASK (2)

1. The barber and the customer are talking.
2. The police has a reward for anyone who will find the killer; it is in the paper.
3. Mr. Budd brings the paper for the customer.
4. The customer hides his left hand.
5. Mr. Budd has seen it.
6. The customer has a horny thumb-nail.
7. Many people have such an ugly mark, for example his friend, Bert Webber.
8. The customer gives Mr. Budd a meaningful look.

Appendix C
STAGE 3
Classroom Observations

Appendix C1

OBSERVATION SHEET (A)

(For the researcher's use only)

Subject		Initiation Type		Response Type
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

CATEGORIES

a. Focus on content in general

b. Focus on text structure

c. Focus on meaning

d. Focus on print

e. Focus on illustration(s)

f. Other

Appendix C2

RESULTS OF CLASSROOM OBSERVATIONS

Subject	$B1S_1$	$B1S_2$	$B2S_1$	$B2S_2$	$B1A_1$	$B1A_2$	$B2A_1$	$B2A_2$
1	a	a, b	b, f	a, a	a, a	c, c	a, a	c, a
2	a	a	b, f	a	a, a	c, c	c, c, c	c, a
3		b	b, f	a	a, a	c, c	f	a
4		b	b, f	a, b	a	f, b	a	c
5			b, f	a	a	f, b	c, c, c, f	b
6			b, f	b	a	a, b	c,f	f
7			b, f	b	a	a, b	a, a	c
8				b	a	a, b	c	b
9				b	a	a, b	f, f	f
10				b	a	d, b		c
11				b	a	d		
12								
13								
14								
15								
Total	**13%**	**26%**	**46%**	**73%**	**67%**	**73%**	**60%**	**46%**

KEY

a= Focus on content

b= Focus on structure

c= Focus on meaning of words

d= Focus on print

e= Focus on illustrations

f= Other (eg pronunciation)

Appendix C3

OBSERVATION SHEET (B)

(For the students' use only)

Name_____ **Class**_____

Specialisation_____ **Lesson**_____

Date_____

==========

Part One

During this reading lesson you are kindly requested to write down any problems/solutions that come to your mind regarding the passage and the reading exercises. You can use either English or Arabic for this.

a. Problems/solutions about the text in general

1. Problem_____

Solution_____

2. Problem_____

Solution_____

==========

b. Problems/ solutions about the title

1.Problem_____

Solution_____

2. Problem_____

Solution_____

==========

c. Problems/solutions about any words/phrases

1.Problem_____

Solution_____

2. Problem_____

Solution_____

==========

d. Problems/solutions about the sounds of the words/their pronunciation

1.Problem_____

Solution_____

Problem_____

Solution_____

Part Two

e. *Kindly write down as many questions as come to your mind as you go through this reading lesson, in relation to the passage.*

1._____

2._____

3._____

4._____

5._____

f. *Did you ask the teacher any of these questions during the lesson? Please tick the ones you actually asked.*

Thank You

Appendix D
STAGE 4
STRUCTURED INTERVIEW

Name_____ **Year**_____
Mother tongue_____ **Specialisation**_____
Date_____

1. Do you have any specific reading habits, eg time, place ?

TIME	morning	afternoon	night
BS	7%	41%	52%
BA	23%	20%	57%

PLACE	home	library
BS	96%	4%
BA	87%	13%

==========

2. Generally speaking, how do you consider yourself as a reader in Arabic/English?

Arabic

	v good	good	average	poor
BS	24%	72%	4%	0%
BA	47%	53%	0%	0%

English

	v good	good	average	poor
BS	0%	41%	59%	0%
BA	7%	50%	43%	0%

3. (a) Do you ask yourself questions about language?

	always	often	rarely	never
BS	34%	21%	45%	0%
BA	30%	33%	37%	0%

3. (b) About content?

	always	often	rarely	never
BS	45%	17%	28%	10%
BA	33%	27%	37%	3%

4. Does this method help you in understanding what you read?

	Yes	No
BS	86%	14%
BA	87%	13%

5. If yes, how does it help? Please explain.

	grammar	vocabulary	content	other
BS	4%	46%	42%	8%
BA	0%	63%	25%	13%

6. What do you find easier, to read, write speak or understand English? Use numbers to show the easiest, etc?

	speak	understand	read	write
BS			30%	
BA			60%	

7. Have you developed any special reading technique/ trick?

	Yes	No
BS	30%	70%
BA	60%	40%

7.a If so, mention them.

	notes	summary	dictionary	other
BS	45%	11%	11%	33%
BA	26%	5%	11%	58%

8. In your opinion, what makes a good reader?

A good reader is the person who depends on.....

	pronunciation	word	frequency	other
BS	18%	18%	55%	9%
BA	21%	28%	45%	6%

9. What would your final goal for learning English be?

	understand	speaking	reading	writing
BS	52%	35%	10%	3%
BA	67%	27%	6%	0%

10. How much does your reading in Arabic/English help you in your learning of the language?

Arabic

	a lot	average	little	v little
BS	64%	21%	15%	0%
BA	37%	3%	3%	0%

English

	a lot	average	little	a little
BS	36%	43%	18%	4%
BA	53%	27%	20%	0%

Thank You

Appendix E
Stage 5
Verbal Protocols

Appendix E1
Verbal Protocols (English)

Prereading Directions

Before you begin reading the passage, read the title only.

Title: **The Planemakers**

1- What do you know about the subject?

a lot	a little	very little	nothing

2- What do you think the text will be about?

I think it will be about_____

Reading Directions

Note : This session will be tape-recorded.

1- The text should be read silently once. As you read, you are asked to stop reading whenever you reach a point marked by numbers, eg [1]. [2], and so on. At these points talk aloud about what you were thinking, (about the language or the content of the text) as you read that part of it. If you are facing a problem mention it, and say how you intend to solve it.

2- Continue reading in this way

3- Try to read as if you are on your own.

4- You will not be interrupted.

There are two main things that make aircraft engineering difficult: the need to make every component as reliable as possible and the need to build everything as light as possible **[1]**. The fact that an aeroplane is up in the air and cannot stop if anything goes wrong, makes it perhaps a matter of life or death that its performance is absolutely dependable **[2]**. Given a certain power of engine, and consequently a certain fuel consumption, there is a practical limit to the total weight of aircraft that can be made to fly **[3]**.

Out of that weight as much as possible is wanted for fuel, radio navigational instruments, passenger seats, or freight room, and, of course, the passengers or freight themselves **[4]**. So the structure of the aircraft has to be as small and light as safety and

efficiency will allow. The designer must calculate the normal load that each part will bear **[5]**.

This specialist is called the 'stress man'. He takes account of any unusual stress that may be put on the part as a precaution against errors in manufacture, accidental damage, etc. The stress man's calculation go to the designer of the part, and he must make it as strong as the stress man says is necessary **[6]**. One or two samples are always tested to prove that they are as strong as the designer intended. Each separate part is tested, then a whole assembly - for example, a complete wing- and finally the whole aeroplane **[7]**. When a new type of aeroplane is being made, normally only one of the first three made will be flown. Two will be destroyed on the ground in structural tests. The third one will be tested in the air **[8]**.

Two kinds of ground strength tests are carried out **[9]**. The first is to find the resistance to loading of the wings, tail, etc until they reach their maximum load and collapse. The other test is for fatigue strength **[10]**.

(Source Mosback & Mosback 1976:36-37)

Appendix E2

Verbal Protocols (Arabic)

[English version and original]

OLD AGE AND THE RESPIRATORY SYSTEM

It is noted that respiration is also affected with the advancing of age, due to the weakening of the muscles that help this activity, and also due to the non-flexibility of the thorax, as is the case with children or younger people **[1]**. We also see that the lungs too lose their strength and some expansion takes place in the air-sacs **[2]**. That is why we find that the breathing rate increases with old aged people when they exert simple, basic muscular efforts **[3]** though that does not stop them from going through the usual activities at that age.

However, if an old aged person is affected with inflammation either in the air-sacs or in the lungs, and this usually happens in old age, and if this is ignored then the picture changes **[4]**. Then we find that the breathing rate or rather the breathing difficulty is great, even when a little effort is exerted or even at rest. If that happens the relatives of the old aged person should take him to the doctor **[5]**.

The patient should not except an increase in the temperature, as is the case with younger patients **[6]**, because in most cases, in old age inflammation of the lungs is not accompanied with an increase temperature [7] or any changes in the number of white corpuscles, because immunity is low in old aged people [8].

And prevention here for the old people is better than cure. They should be kept away from sources of infection and from cold air currents **[9]** and they should be treated as soon as they are found coughing so that infection does not spread to the lungs **[10]**.

(Source: Al-Arabi, 1972)

الشيخوخة والجهاز التنفسي

من الملاحظ أن عملية التنفس تتاثر كذلك بتقدم السن ، وذلك لضعف في العضلات التي تساعد على هذه العملية ، وكذلك لعدم مرونة القفص الصدري كما هو الحال في صغار السن (١) ، وكذلك نرى أن الرئتين تفقدان مرونتيهما ، ويحدث بهما بعض التمدد في الحويصلات الهوائية (٢) لذا نرى أن المسن كثيرا ما تزداد سرعة تنفسه عند قيامه بمجهود عضلي بسيط (٣) على أن ذلك لا يقيد من نشاطه المعتاد في مثل سنه. أما اذا أصيب بالتهابات في الشعب الهوائية أو الرئتين ، وهذا كثيرا ما يحدث في المسنين ، وأهمل العلاج ،فان الصورة تتغير (٤) ونرى أن سرعة التنفس بل وضيق التنفس يكون حليفه عند القيام بمجهود بسيط، أو حتى عند الراحه. فاذا لاحظنا ذلك فالواجب على اقارب المسن عرضه على الطبيب. (٥)

ولا ينتظر المريض ارتفاعا في درجه الحرارة كما هو الحال في الصغار من المرضى (٦) ، اذ انه في معظم الحالات تكون التهابات الرئتين غير مصحوبة بارتفاع في درجه الحرارة ، (٧) أو تغيرات في عدد كرات الدم البيضاء ، لان المناعة ضعيفة في كبار السن (٨).

والوقاية هنا للكبار خير من العلاج ، فليبتعدوا عن مصادر العدوى والتعرض لتيارات البرد (٩) وعلاجهم بمجرد حدوث سعال بسيط خوفا من تسرب المرض من القصبات الهوائية الى الرئتين. (١٠)

Appendix F

SUBJECTS' OVERALL READING COMPREHENSION MEASURES: TEACHER ASSESSMENT, CLOZE TEST, and RECALL TASKS

GROUP	SUBJECT	CLOZE	RECALL1	RECALL2	TEACHER	MEAN
B1S	001	40	50	24	92	51.50
	002	70	75	75	84	76.00
	003	40	75	50	82	61.75
	004	50	60	36	82	57.00
	005	40	50	36	68	48.50
	006	40	84	36	82	60.50
	007	60	36	60	64	55.00
	008	30	50	72	70	55.50
	009	50	50	50	90	60.00
	010	60	84	75	84	75.75
	011	60	50	75	92	69.25
	012	40	84	24	80	57.00
	013	40	36	00	84	53.33
	014	40	60	50	86	59.00
	015	60	60	36	72	57.00
B2S	016	40	75	36	88	59.75
	017	60	75	50	88	68.25
	018	60	75	50	82	66.75
	019	60	75	75	86	74.00
	020	60	50	36	80	56.50
	021	60	75	75	94	76.00
	022	50	75	00	74	49.75
	023	60	60	60	88	67.00
	024	40	75	36	86	59.25
	025	60	60	60	72	63.00
	026	60	60	12	66	49.50
	027	60	84	50	76	67.50
	028	60	84	75	68	71.75
	029	60	84	75	88	76.75
	030	50	36	36	70	48.00
B1A	031	40	75	25	67	51.75
	032	50	60	60	66	59.00
	033	60	60	50	64	58.50
	034	40	75	75	87	69.25
	035	60	75	75	91	75.25
	036	50	75	84	67	69.00
	037	60	84	100	80	81.00
	038	40	84	75	61	65.00
	039	50	75	75	59	64.75
	040	60	50	25	66	50.25
	041	40	84	25	57	51.50
	042	10	60	12	66	37.00
	043	40	00	25	76	47.00
	044	70	75	36	77	64.50
	045	60	25	50	88	55.75
B2A	046	70	100	84	64	79.50

	047	60	75	00	64	49.75
	048	50	75	84	66	68.75
	049	40	100	36	60	59.00
	050	40	60	00	58	39.50
	051	60	75	60	61	64.00
	052	60	50	12	54	44.00
	053	40	84	60	68	63.00
	054	50	50	36	62	49.50
	055	60	60	36	57	53.25
	056	60	75	60	52	61.75
	057	40	36	60	60	49.50
	058	50	50	12	66	44.50
	059	60	100	50	52	65.50
	060	60	84	60	52	64.00
B1S	061	20	24	00	90	44.67
	062	50	60	24	56	47.50
	063	30	12	24	64	32.50
	064	40	50	50	50	47.50
	065	30	60	00	80	56.67
	066	40	75	50	78	60.75
	067	50	60	24	70	51.00
	068	50	75	50	68	60.75
	069	40	75	50	88	63.25
	070	60	75	36	72	60.75
B2S	071	60	84	60	76	70.00
	072	60	75	36	64	58.75
	073	60	50	36	76	55.50
	074	60	84	75	90	77.25
	075	60	75	75	84	73.50
	076	60	50	25	62	49.25
	077	60	50	50	58	54.50
	078	40	50	12	84	46.50
	079	60	60	75	70	66.25
	080	60	50	75	70	63.75
B1A	081	40	75	36	70	55.25
	082	40	60	00	84	61.33
	083	20	60	50	80	52.50
	084	30	60	25	58	43.25
	085	50	60	36	85	57.75
	086	40	75	50	67	58.00
	087	60	60	36	60	54.00
	088	60	60	36	45	50.25
	089	50	75	75	76	69.00
	090	50	75	75	61	65.25
B2A	091	50	75	36	79	60.75
	092	70	84	50	71	68.75
	093	60	50	36	72	54.50
	094	40	00	00	62	51.00
	095	40	60	36	54	47.50
	096	50	100	72	61	70.75
	097	60	60	50	61	57.75
	098	60	50	12	52	43.50

	099	60	60	00	51	57.00
	100	40	25	00	57	40.67

Appendix G

USE OF PROBLEM-IDENTIFYING AND PROBLEM-SOLVING STRATEGIES IN L1 AND L2

		English		Arabic	
Subject		PI	PS	PI	PS
001		17	2	11	4
002		3	12	4	6
003		11	5	1	9
004		13	0	2	7
005		14	4	9	1
006		6	1	10	0
007		9	0	8	2
008		10	0	8	2
009		10	0	9	1
010		17	1	9	0
011		14	0	10	0
012		10	0	4	4
013		11	0	4	6
014		11	0	6	4
015		10	5	6	4
016		13	0	5	7
017		9	1	4	7
018		16	1	3	7
019		10	0	5	12
020		14	1	7	3
021		2	8	7	3
022		13	0	6	4
023		13	3	2	9
024		4	11	4	6
025		3	9	3	8
026		-	-	0	0
027		-	-	0	0
028		-	-	0	0
029		1	13	6	5
030		8	0	6	3
031		0	8	6	4
032		8	3	4	6
033		9	1	3	5
034		8	3	1	12
035		17	5	7	2
036		14	1	7	7
037		9	9	0	0
038		11	10	2	11
039		4	11	3	9
040		8	6	5	5
041		12	1	3	6
042		10	4	3	7
043		15	1	2	9
044		9	7	4	5
045		42	10	4	5
046		11	10	7	13
047		15	0	3	10

048		3	13	5	5
049		12	7	4	5
050		10	0	6	3
051		13	0	5	3
052		11	0	1	10
053		12	3	4	6
054		13	0	5	4
055		11	3	4	9
056		6	5	3	7
057		13	2	2	6
058		12	2	4	7
059		10	6	4	6
060		13	14	4	6

Appendix H

GOOD READER"S' USE IF STRATEGIES IN L1 AND L2

		English		Arabic	
Subject	Mean	PI	PS	PI	PS
2	76.60	3	12	4	6
3	61.75	11	5	1	9
10	75.75	17	1	9	0
11	69.25	14	0	10	0
17	68.25	9	1	4	7
18	66.75	16	0	3	7
19	74.00	10	0	5	12
23	67.00	13	3	2	9
29	70.75	1	13	6	5
34	69.25	8	3	1	12
35	75.25	17	5	7	2
36	69.00	14	1	7	7
37	81.00	9	9	-	-
46	79.50	11	10	7	13
48	66.33	3	13	5	5

Mean=71.32 **SD=5.3**

POOR READER"S USE OF PI AND PS STRATEGIES IN L1 AND L2

		English		Arabic	
Subject	Mean	PI	PS	PI	PS
1	51.50	17	2	11	4
5	48.50	14	4	9	1
13	53.33	11	0	4	6
22	49.75	13	0	6	4
30	48.00	8	0	6	3
40	50.25	12	1	5	5
41	51.50	12	1	3	6
42	37.00	10	4	3	7
43	35.25	15	1	2	9
47	49.75	15	0	3	10
50	39.50	10	0	6	3
52	44.00	11	0	1	10
54	49.50	13	0	5	4
57	49.50	13	2	2	6
58	44.50	12	2	4	7

Mean=46.78 **SD=5.5**

Appendix I

SAMPLES FROM THE ENGLISH PROTOCOLS

S 1		
TEXT	**PROTOCOL**	**STRATEGY**
1	I understand what means by these sentences but I don't understand the word 'reliable'.	m compre. q word.
2	I understand the sentences but I have some confusion about the last three words.	m compr, q words.
3	I understand the sentences	m compre.
4	I have some words which is difficult to understand it so I don't understand some of the sentences	q word , q sentences
5	I understand the sentences	m compre
6	I understand the sentences but I have a word ' the word ;'precaution' which is difficult to me.	m compre. q word
7	I understand the sentences but I have two difficult words' 'intended', and 'assembly'.	m compre. q words
8	I understand all the sentences	m compre.
9	I understand all the words but I don't understand what mean by these words.	m compre. q content
1 0	After I read 10 I understand what mean by number 9 and I understand it but one word which is difficult to me. The word is 'fatigue'.	integrate, q word, m compre.
S 2		
1	the careful design of aircrafts are essential	summarise , interpret.
2	Performance is counted as an important factor in the design of aircrafts	interpret, use b know.
3	'Consequently' is a word that I don't know but I think this talks about the fuel consumption where fuel consumption is another where engineers have to bear in mind very carefully.	q word, infer, use b knowledge.
4	The design of the instruments and the p ane. One comment the word 'freight' I didn't know the meaning.	summarise , q word
5	I understand that calculations must be accurate for the des gnership, a better solution in the f eld of navigation	summarise , interpret.

6	The stress man I feel is an important has an important part in the process as to give good information and this would result in better design.	interpret, summarise.
7	Each part of the plane is tested, then those parts are assembled. These designs of an aeroplane are assembled to make initial tests on them.	summarise , use b knowledge
8	The structural tests on two of the aeroplanes designed are performed and the third one is to be flown in the air.	summarise
9	The ground strength tests should be tests of strength of each part of the plane or the whole plane. There is a question I don't understand.	summarise , q content.
1 0	Clarifies what this question. For each part it is to be tested on ground and then some further tests are put determine when each part should collapse or wear out.	integrate, summarise.
S 5		
1	It is clear except one word 'reliable'.	m compre. q word.
2	It is clear	m compre.
3	The paragraph is clear and it is simple	m compre. react to text
4	The idea is simple but there is difficult pronunciation of the word beside 'radio', and 'freight room' and its meaning	get main idea, q pron. (twice) q phrase
5	The meaning is clear, there is certain idea which is concentrated talks about the stress man ; if I understand this meaning I can understand this para.	m compre. comment on behaviour, q para.
6	Is going on the para 5 then it is talking about how we test about the part of the aeroplane; simple no word is difficult	integrate, get main idea, m compr.
7	No problem	m compre.
8	Not any difficulty	m compre.
9	No	m compre.

1 0	The idea is understood but the difficult is understanding some meaning of words like 'collapse' and 'fatigue strength'.	get main idea, q words, q phrase.
S29		
1	We can say that any branch for studying is difficult for example civil engineering or ant other branch here it is mentioned aircraft engineering the way of understanding the branch itself give the answer, give the solution to each problem, for example if I would like to be a civil engineering then I must do first like this branch and then study it so every problem I face it become easy for me.	get main idea, use b knowledge
2	I can see that when something goes wrong with the aeroplane then the pilot must, he must solve this problem; this can be done when he has an experience in the branch.	summarise , use b knowledge.
3	From my knowledge I can say that there are different types of engines and each engine has itself weight and according to its type the fuel consumption can vary	use b knowledge, get main idea
4	Is about how total weight of aircraft is divided	get main idea
5	Of course in the first type of aircraft when it has the properties it is light i weight and in its efficiency is more and this can be done by the designer or the man who is responsible for this type of constructing aircraft; he must calculate how he can find the normal load for each part or for each component of the aircraft	paraphrase , use b knowledge,
6	It is about the stress man who calculates the stresses which can be used for the construction of any part of the aircraft, he takes into account also the unusual stress, the unusual stress can be taken as a factor of safety in case of against any error in the manufacturing of the aircraft and the designer should make the design or he must do the structure engine as the stress man calculated	paraphrase , use b knowledge.
7	By th's way we can structure any wing or ant part in the aeroplane	get main idea
8	The meaning itself is not clear	q content

10	It is ta king about how we can find the resistance of the loads of the wings, tails and other parts of the aeroplane.	summarise
S35		
1	Although some words are difficult to understand but i the whole I could understand the meaning	infer
2	Is almost clear	m compre.
3	Although it's not very clear, especially that it have some words which are not clear like 'consumption' but I could understand for the last meaning of it	infer, m comprehen sion
4	It is clear but the way of writing it is so long words and like that I mean	m compre. react to text,
5	It is clear but there is something with the designer, if it say the designer of the plane it make it more clear and I think it is something known that it should be calculated every part that it should how much it will bear	m compre. q content, use b knowledge
6	Although it's a long para and something it is a bit difficult to understand as a whole especially here 'stress man' its not very clear also some words and their meaning.	react to text, q para, q content, q words.
7	Its clear but I couldn't understand when it said 'then the whole assembly', what does he mean by that	m compre. q phrase, q content
8	It's not very clear but especially when he says the first, only one of the first three what does he mean, the parts of aeroplane, not very clear, two will be destroyed number two or what not very clear	m compre.
9	Is clear	m compre.
10	It is c ear on the whole but some words not very clear, they are like 'collapse' and 'fatigue', that's all.	m compre. q words
S37		
1	Well I think we have here a very good expression, it is in 'as re iable as, 'as light as,' it gives the perfect, the ideal plane how it will be and so on	react to text

2	I don't think that this performance is absolutely dependable because this technology is very proved and the people who are specialised in repairing the wrongs that happen in the plane, in the sky they are capable to mend it to repair it.	q information, use b knowledge
3	It is clear that the plane has to be practical in carrying the very bearable weight in it because it is a matter of carrying the very the most maximum weight in it and on the other hand it has to be safe connected with the load.	m comprehension, get main idea, use b knowledge.
4	There has to be some rooms or spaces or in other words the rest of the weight needed has to be available for the other things carried in the plane for example the....and passengers seats ; it is mentioned here	paraphrase
5	As a student I don't know the structure here what it means , here the point or the principle; the word 'precaution' here it will be more familiar to change to 'caution'; we certainly know the word 'caution', 'precaution' is a bit strange.	q structure, q word, (twice)
6	Clear	m compre.
7	I guess it is accurately mentioned from very small parts of the aeroplane.	guess
8	It is not that clear here in 'two will be destroyed on the structural tests' it doesn't seem like something like an aeroplane because we know that aeroplanes flying in the sky not on the ground.	q content, use b knowl.q infor.
9	It doesn't make sense because we know that the tests have to be in the sky not in the ground, otherw'se it is not yet a plane	q infor. q content, use b know.
10	The words 'fatigue strength' or how do we pronounce it, it is not clear at all.	q phrase, q pron.
S38		
1	It is clear	m compr.
2	It is clear but there is some word like 'performance' and "dependable'.	m compre. q words.

3	It is also clear but there is some word like 'consequently' and 'consumption'	m compre. q words.
4	It isn't clear, I mean that there is some word cannot help me to bring out the main meaning like it is a name of a thing I think, 'navigational, and 'freight room'.	q word, infer, guess.
5	I get the main meaning but there is some word like the 'designer' , I think it is a name of one part of the aeroplane have a special function, I can't guess what is its exact function and there is another word like 'efficiency', I think it's exactly but I can't get its meaning	get main idea, infer, guess
6	It is about a man, his function is he takes account of unusual stress , he called the stress man and it is clear	summarise m compr.
7	I think it is clear	m compre.
8	I can't guess what does he mean by saying 'one ....be flown'	guess, q content
9	Now I understand what does he mean by 'one of the first three made, by what I understand in 8	integrate, m compre.
10	There are three ground tests, the first is to find the resistance to load of the wings, tail and the other test is for fatigue strength and in fact I can guess the exact meaning of the text	summarise , get main idea
S46		
1	There are two main things made in the production of the aeroplane difficult, the need to make every little thing reliable as possible and need to build anything very clearly as light as possible	paraphrase
2	The important things that the aeroplane is up in the air and it cannot stop it and it is very important to people's life, I can't understand the meaning of 'dependable'	paraphrase , q word
3	This sentence I think related to the weight of the aeroplane, I can't understand the meaning of words,the exact meaning of this para and 'consequently' and 'consumption'.	infer, q. word, q. para
4	Referring also to the weight of the aeroplane, it must be is wanted for fuel, 'radio navigational' I can't understand this word and the instruments and the passenger seats. I cant understand well this para.	summarise , q phrase, q para

5	It gives information about the structure of the aircraft has to be small and safety, the designer must calculate the normal load of each part ; the meaning of 'bear' I can't understand.	get main idea, q word.
6	There is a man called stress man , he is specialist man ; he takes account of any unusual stress may be put on the part and he is , i think responsible of the structure of his aircraft ; he designs the part of the aeroplane and he must make it as strong as the stress man says is necessary; the meaning I can't understand, the meaning of or pronounce 'precaution'.	paraphrase , q word, q pronunciation.
7	I can't understand the meaning of samples because I think it is the key for the rest of this para.	q word, integrate, comment on behaviour
8	They made their test for the aeroplane, the first three made will be made normally will be flown , two will be destroyed on the ground i structural tests, the third will be tested in the air.	paraphrase
9	There's two kinds of the ground which may be suitable for the aeroplane test of to the aeroplane but I can't find the very exact meaning of the phrase 'carried out'	paraphrase , q phrase.
10	One kind of this ground to find the resistance to load of the wings, tail the other is for this strength but I can't understand the meaning of 'fatigue'.	summarise , q word.
S48		
1	Making aircraft engineering there are two things that a person can it must the subject of doing this kind of aeroplane it has to e light and the second there is a word I don't understand it 'component'.	summarise , q word
2	When the aeroplane is up in the air it can't stop because if it stops it might be a case of death or life, a person may fall down and die.	get main idea, use b knowledge
3	An aeroplane must have a certain fuel that works and it must have even a certain weight.	interpret

4	According to the fuel and the weight it must have the passengers must have this correct weight and the rooms in the aeroplane and the passengers that can go on with this weight the structure of the aircraft must be small and safe and the engineer must see the weight of the load that normally has its part.	interpret, paraphrase
5	I think in this sentence a person that they call the stress man , takes care of all the designs and making the aeroplane and they go back to this stress man, he gives them the directions of building	interpret, paraphrase
6	Like I said before the stress man helps the people or the engineers to design the aeroplane, for example the weight of the wing, and the weight of the whole aeroplane	integrate, summarise
7	when a new aeroplane is made the three first aeroplanes, one can be flown and the other has to be destroyed on the floor and the third it goes in the air	paraphrase
8	clear	m compre.
9	There are two kinds of strength that the aeroplane is test	paraphrase
10	One of the tests is for loading of the wings and the tail and see how does it need for the weighting, the other is testing for the strength of the whole aeroplane and how it goes up in the air, how much strength it will need.	paraphrase , interpret.
S50		
1	I don't find any difficult words	m compre.
2	I found 'dependable' is difficult	q word
3	I found 'consequently' is difficult	q word
4	I don't find any difficult words	m compre.
5	Same	m compre.
6	I find 'precaution' is difficult'	m compre.
7	I don't find any difficult words	m compre.
8	Same	m compre.
9	Same	m compre
10	I find 'collapse' and 'fatigue' is difficult.	q words
S52		
1	I can't understand the pronunciation of the words 'aircraft engineering'	q pronun.

2	I can't understand the meaning of 'performance'	q word
3	Is clear	m compre.
4	I can't pronounce the word 's t r c t u r e '	q pronun.
5	I can't understand what is the meaning of these words 'manufacture' because I can't understand the main meaning of the sentence	q word, q sentence
6	Is clear	m compre.
7	Is clear	m compre.
8	Is clear	m compre.
9	Is clear	m compre.
1 0	I can't understand what is the meaning of maximum	q word
S 6 0		
1	Is clear its words but I don't know the main idea about it	m compre. q content
2	Is not clear because I find some difficult words such as 'performance', 'absolutely', 'dependable'.	q words
3	Also we have some words which we don't know them such as 'consequently', 'consumption', i think it is scientific word but we know the para exact	q words, use b know;, m compre.
4	I understand it but some words is difficult like 'instruments; we know the para it is talking about passengers and seats and radio and what aeroplanes need	m compre. q word, summarise , use b know.
5	Is talking about the structures of the aircraft and how you learn or how you understand the structure and how you get a safety ; I think two words I don't understand them like 'efficient' and 'calculate'.	interpret, q words
6	I know that the para is talking about the specialist which is talking about the stress man and how he takes account and he feel and he notice the dangers and what you need and what is necessary some words I don't know them such as 'calculation' and 'damage'	paraphrase q words,

7	It is like 'intended', 'samples', 'assembly'; it talks about the parts, separate and if we are engineering you will understand them I think.	get main idea, q words, use b knowledge, infer.
8	Also talks about the take from the ground and how it fly and how use this part and this part and we have, and few make mistakes it will be destroyed on the ground we have the general ma'n idea	summarise , get main idea, interpret
9	I know every word in it , I will try we have, it ta ks about the kinds of strength of ground and how you test them.	m compre. infer, get main idea.
1 0	It is talk about the two kinds which we mentioned them in para 9 it is about how the resistance to loading, how use the wings and the tails, how use the parts of the aeroplane etc, I don't know some words in it as 'collapse', 'fatigue'.	integrate, paraphrase , q words.

Appendix J

SAMPLES FROM THE ARABIC PROTOCOLS

S1		
Text	**Protocols**	**Strategy**
1 - 5	Is clear for me as a scientific subject and as language.	mo. compre. use b. know
6 - 8	Here there is new information for me in that bronchitis is not accompanied by an increase in old age and I find this paragraph difficult to understand, when old people are affected with inflammation of the lungs there is no change in the number of white blood corpuscles? How is it that there is no change? Is it because of age? Or is it because of immunity and because there is little immunity how then temperature doesn't rise? The paragraph is difficult.	q content (twice), q infor. (thrice), m compr. (twice), use b know..
9 - 1 0	It is clear as language and scientific matter	m compre. use b know.
S2		
1 - 5	In the first paragraph it talks about respiration and how it is affected by old age and the other factors that also affect it such as some diseases and how the same person may be affected due to age where, for instance, the lungs may lose its flexibility and strength.	recognise text structure, paraphrase (thrice)
6 - 8	What we find actually happening is that the number of cells is reduced and so during any infection there is no production of white corpuscles which then causes an increase in the body; so there is no increase of temperature when the body is affected with any illness in old age.	interpret, m comprehen sion, use b knowledge.
9 - 1 0	Of course prevention is better than cure because to old people any illness may cause great effects in a way that is impossible to compare with younger people.	react to text, use b knowledge
S5		
1 - 5	I find that after reading this passage everything is clear because most os the ideas are known and so I face no problem	m compre use b knowledge
6 - 8	Clear	m compre.
9 - 1 0	Clear	m compre.
S29		
1 - 5	These symptoms are true in the case of old people but if a person is young and is affected by such a weakness in the respiratory system it is possible that these symptoms may appear as well. It is not that he has to be old.	react to text, q infor. use b knowledge (twice)
6 - 8	There no comment or question for this part.	m compre.
9 - 1 0	Prevention is better than cure in general whether it is for old people or young people because we see that if a person keeps away from	paraphrase , use b knowledge.
S35		

1 - 5	The topic is normal and clear; it is a scientific topic dealing with breathing. It is surprising that there is no mention of the role the heart plays in all this especially at old age.	m compre.
6 - 8	In think that this is clear but there is the word 'expect... a rise in temperature' the word expect is not suitable, I mean if the writer has used a different word, a better word in meaning.	m compre. q phrase, q word, react to text.
9 - 10	I think it is clear, I mean there is no problem.	m compre. (twice)
S36		
1 - 5	It is clear but there is this expansion in the air sacs, I don't understand what exactly is meant here. However, I gained some knowledge about respiration at old age.	m compre. q infor. q content, react to text.
6 - 8	It is clear because it is talking about temperature and that it does not show in old people. I didn't know that the signs that there in old age patients are different from those found in younger patients.	m compre. paraphrase , interpret, react to text, use b know.
9 - 10	It is clear , it tells us about the way of cure or prevention and it is like an advice to those old people who should rush for check-ups even if the symptoms are simple and light; it is clear	summarise , get main idea, m compre.
S38		
1 - 5	They have listed a number of reasons, we can say that respiration at old age is not normal because of the weakening of the muscles and also because the lungs lose their flexibility and also because of the expansion in the air sacs. These are the reasons mentioned, no comments.	summarise , rec. text structure, react to text, m compre.
6 - 8	Of course it is telling about the symptoms of the disorder, that is, if there is any disorder in the respiratory system in old people and then it says that among these symptoms is the rise in temperature, but in old people this is not a basic sign for any illness with the addition of the decrease in the number of white blood cells. This does not change in the other symptoms through which we should understand the disorder because it is normal that in old age the number of white cells or immunity is low.	react to text, use b knowledge (thrice) paraphrase .
9 - 10	It is a piece of advice here, advice to old people or to anyone in general that prevention is better than cure because in the case of old people for even if it is flu or any inflammation in the trachea it quickly spreads to the lungs.	react to text, paraphrase , use b know.
S46		

1 - 5	This subject deals with how the respiratory system is affected by the age factor and we find that the muscles are weakened. The lungs lose their strength and expansion takes place in the air sacs; that is why we find that old people have breathing problems and the rate increases when movement occurs but this does not deter them from doing the usual activities. However, if they are infected with inflammation in the bronchi and the lungs (and this is common in old age), and if it is not cured the picture changes; so we find that problems in breathing becomes evident even at rest. In this case doctors must be consulted. I disagree with the writer that old people are affected with these problems. It is possible	paraphrase (twice), use b knowledge (thrice), m comprehen sion, q informatio n (twice) q content, react to text, rec. text structure.
6 - 8	Thus we we notice here that sometimes with what happens in the chest there is a rise in temperature. I can't comment on this because it may be possible, it is a scientific topic.	integrate, paraphrase , react to text, use b knowledge.
9 - 1 0	I agree with the writer that prevention is better than cure and actually whenever a person avoids source of infection and cold air currents, this gives a longer and even a healthy life.	react to text, paraphrase , use b knowledge.
S 4 8		
1 - 5	We notice that respiration is affected by old age so we find that when a person ages he starts getting breathing difficulties and it does not remain as it was when the person was young. Whenever this person does anything he faces problems in breathing and that the breathing rate also changes and gets tired with the least effort.	paraphrase , m comprehen sion.
6 - 8	We find that as a person grows old the resistance in the body decreases, and also the temperature as well changes; it is not the same as when one is young and immunity is still high.	paraphrase , use b knowledge, m compre.
9 - 1 0	Prevention in old aged people is better than cure so they should avoid infection and hard work which may help in increasing the rate of breathing so they should live in peaceful places so that there is rest.	paraphrase , use b knowledge.
S 5 0		
1 - 5	I don't have any problems in language. A person may benefit from this subject by taking the advise before he is affected by such problems.	m compre. react to text.
6 - 8	Clear	m compre.
9 - 1 0	As the saying goes 'prevention is better than cure'. I agree	get main idea, react to text.
S 5 2		

1 - 5	The subject tells us about respiration in old people. We find that respiration in old people is weak and whenever the person exerts himself and does any muscular activity we notice that his breathing rate increases. This is not new because the person is already old; he may also be affected with breathing problems, that is why doctors usually advise old people to rest and not to work too much.	paraphrase , react to text, use b knowledge (twice) m comprehen sion.
6 - 8	The relations of the old people must take them regularly for consultations and medical check-ups - the symptoms of any disease may not be evident; there may be internal effects unlike children who show signs of fever and change in temperature when they are ill. With old people due to the lack of immunity the signs don't appear.	paraphrase , use b knowledge (twice)
9 - 1 0	As the doctors say that prevention is better than cure so we should not allow them to get exposed to cold air currents and if we notice any signs of, for example, coughing or temperature we must hurry so that they get treatment at the nearest possible chance so that the infection does not spread, as we have seen immunity is low.	paraphrase , use b knowledge, integrate.
S 6 0		
1 - 5	Respiration in old and young people and the means of precaution and prevention from some illness or their seeing the doctor if any change occurs. Old people cannot resist any inflammation of the bronchi or the lungs and if there is enough care from relatives it is good.	react to text, summarise , use b knowledge, m compre.
6 - 8	It talks about the patient if he feels an increase in his temperature when affected with inflammation	get main idea, m compre.
9 - 1 0	At the end he talks of prevention and that it is much better to prevent oneself than to get infected than cure.	integrate, recognise text structure.

Appendix K

SAMPLES FROM THE SELF-OBSERVATION PROTOCOLS

Subject	Lesson	Text	Problem	Strategy/or Solut on
1	1	general	No	-
		title	No	-
		words	pressed/circuit	use dictionary
		pronun.	some words	listen to T
		question	1.The bell mechanism work by battery or by electricity? 2. This lesson is very easy to me.	
	2	general	How to understand the idea of process?	Ask T; read more
		title	No	-
		words	reservoir, purification	use dictionary
		pronun.	reservoir, purification	repeat it more than once
		questions	1. How to use the suitable words to describe the process? 2. How to use the suitable conjunctions?	
S2	1	general	The main purpose of the lesson is it description or using conjunctions?	T should be concerned about language only.
		title	The title gives an impression that descriptions are detailed	Give a simpler title eg An electric bell circuit.
		words	-	-
		pronun.	-	-
		questions	1. Should we give a detailed description of bell mechanism? 2. Is the battery used a dry or wet one?	
	2	general	What is the importance of the simplified flow chart?	Making only one chart is enough.
		title	The title doesn't give a clear idea about the lesson.	Choosing another suitable title such as 'Water purification and project convection'.
		words	T aways puts and makes us use his own words, eg 'convey' is much better than carry or transfer.	Let S choose suitable words in meaning.
		pronun.	reservoir	repeat the word to make it familiar to hearing.

		questions	1. What type of processes used to convey water, eg through pipe?	
S5	1	general	No	-
		title	No	-
		word	sequence, mechanism	ask T, use dictionary
		pronun.	sequence, circuit	ask T
		questions	1. Which language we use to describe the process? 2. How we choose the suitable conjunction?	
	2	general	some new words	-
		title	No	-
		words	reservoir, purification	use dictionary
		pronun.	reservoir, purification	
		questions	-	
S29	1	general	many new words	knowing the meaning of words to know the meaning.
		title	the title carries different meanings.	by reading the text properly.
		words	-	-
		pronun.	some letters may be silent	more practice
		questions	1. How the power station works? 2. What are the main parts of power station?	
	2	general	In step 5 a question has many ideas for answer.	put one of these ideas
		title	meaning of distribution	from input and explanation
		words	meaning of words that have two parts	use dictionary
		pronun.	-	-
		questions	-	-
S35	1	general	the text too easy eg it is very easy to find out which word rhymes with the other.	to be a bit difficult to get it.
		title	predicting is something more complicated in its real meaning than we found in the text	it was better if the content of the lesson concerns more about title.
		words	'just bet that.. happy' in c not clear	ask T
		pronun.	whirl, appendix, tonsi.	-
		questions	1. What is the meaning of 'appendix'? 2. Is it fit to say 'b ank' instead of 'gap'?	

	2	general	The idea of the game.	if i have the idea of the game and play it before it will be easy to get through it more easily.
		title	the title refers to a city	The title must give a short idea about the subject.
		word	preliminary, determined, deadlocked.	use the dictionary, of course.
		pronun.	-	-
		questions	-	-
S37	1	general	The text, in my opinion is divided into two parts the first page is sweetly interesting and the page opposite is strongly dry and has lots of repeated information	the text has to be in the beginning interesting and by gradual degree more and more attractive.
		title	when I glanced at the title in the start of the lesson I didn't think it will connect with greeting cards.	I believe when you send a greeting card and write a lovely words in it, you don't write them for predicting. But actually for a warm, flattery sending your intimacy.
		words	I am not disturbed by difficult or complicated words, because I'm obliged to expect some and it will certainly . so it is better to ignore them.	
		pronun	-	-
		questions	-	-
	2	general	we went through it more quickly whereas it needs more time	reading the text with concentration to solve its mystery.
		title		
		words	gamble, chicago	put it in a meaningful sentence.
		pronun.	dice has two expected pronunciation, 'dais' and 'dis'.	we are out of help in this condition.
		questions	1. What is the target in learning the rule of this game? 2. What is the connection between reading and answering a dozen questions.	
S38				

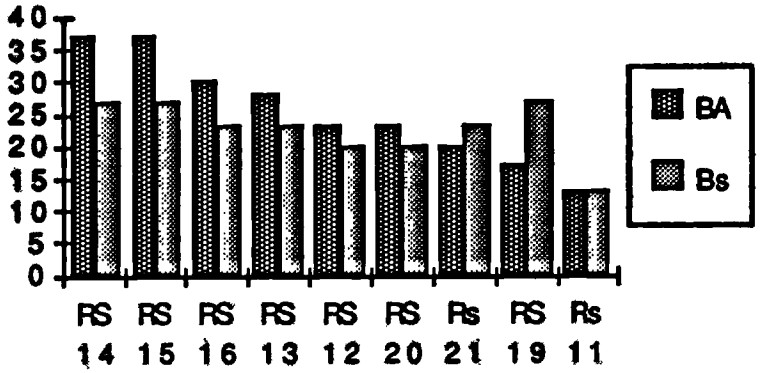
	1	general	The type of table in page 35.	-
		title	At first I don't know about predicting	T explained it
		words	some phrases in the card	ask T
		pronun.	whirl	more practice
		questions	1. Is the operation of the appendix difficult or easy? 2. What is the appendix and who discovered it?	
	2	general	Meaning of some words and their pronunciation	use dictionary /ask T
		title	strange title	why call it this name?
		words	play off series of rounds, a preliminary roll determines, deadlocked players, proceeds clockwise	reading the passage again and again or asking T
		pronun.	combination, preliminary, throw	ask T
		questions	questions on phrases, pronunciation.	
S46	1	general	the language is too difficult	using the dictionary is not enough
		title	is irrelevant/indirect it has a distant meaning	direct titles, reading the text carefully
		words	involved, changing face of Australia	dictionary, guessing, asking T
		pronun.	conscious, pursuits,	divide the word in parts, try several times or ask someone
		questions	1. Why Australia has become a country which deserves to be taken seriously/ 2. Why all people who live in Australia are foreigners?	
	2	general	We don't understand the topic and the purpose for the first time.	read the text more than once
		title	-	-
		words	compound, gesture, intensity	ask T, use dictionary
		pronun.	simultaneously	ask T
		questions	1. Why is just 12 elements? 2. How the author classified only 12 points?	
S50				

	1	general	The language itself is difficult	to use at least simple words to understand.
		title	The title is in indirect speech	to be clear to S
		words	new directions	dictionary
		pronun.	long words	break them up into parts
		questions	1. Why did the author choose Australia? 2. Why did the author not give us the a full information about situation, life and civilisation of Australia?	
	2	general	-	-
		title	-	-
		words	compound gesture.	ask T, use dictionary
		pronun.	long words	divide and pronounce
		questions	1. Why the author chose laughing as a subject? 2. What is the benefit of studying such a topic?	

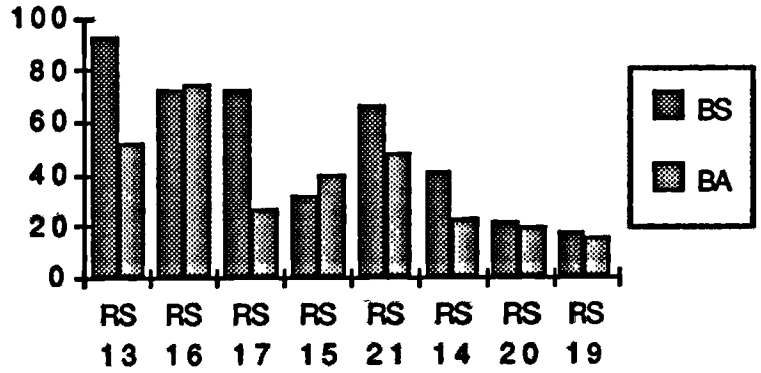
Appendix L

THE USE OF PS STRATEGIES ACROSS THE THREE MAIN MODES

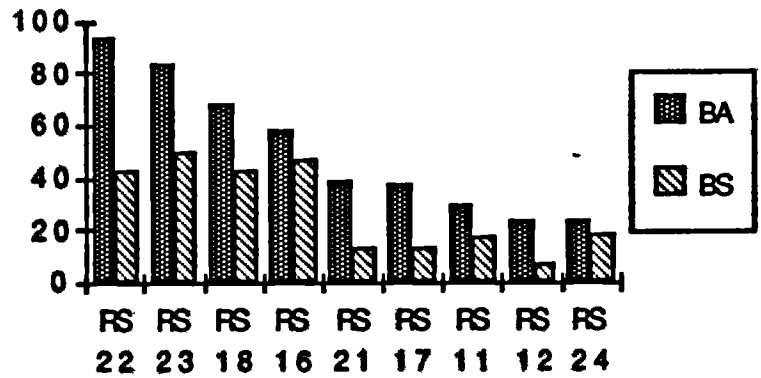
USE of PS Strategies in PE



The Use of PS Strategies in PA



Use of PS Strategies in Observation



Appendix M

LIST OF READING STRATEGIES

RS1	Monitor comprehension
RS2	Question pronunciation
RS3	Question meaning of word
RS4	Question meaning of phrase
RS5	Question meaning of clause/sentence
RS6	Question meaning of paragraph
RS7	Question structure of sentence
RS8	Question meaning of content
RS9	Question information
RS10	Comment on behaviour or process
RS11	Guess
RS12	Infer meaning from context
RS13	Paraphrase
RS14	Summarise
RS15	Get main idea
RS16	Use association and background knowledge
RS17	Recognise text structure
RS18	Reread
RS19	Integrate information
RS20	Interpret
RS21	React to text
RS22	Use dictionary
RS23	Seek assistance
RS24	Use references